



website <http://www.lgservice.com>

LG

# LG Room Air Conditioner

## ***SERVICE MANUAL***

**MODELS: AS-W096URH0/UBH0/UWH0/UMH0  
AS-W126URH0/UBH0/UWH0/UMH0/UCH0  
AS-W096URH1/UBH1/UWH1/UMH1  
AS-W126URH1/UBH1/UWH1/UMH1**

### **CAUTION**

- BEFORE SERVICING THE UNIT, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.
- ONLY FOR AUTHORIZED SERVICE PERSONNEL.

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# LG Model Name

2002



Code	Type	Code of Model	Meaning																																																																																				
1,2	Type of Airconditioner	A~Z	LS: LG Split Type Airconditioner																																																																																				
3	Chassis	A~Z	Name of toll of Unit Ex. LS-R → S R Chassis																																																																																				
4,5	Capacity(Btu/h)	1~9	Cooling/Heating Capacity Ex. "09" → 9,000Btu/h																																																																																				
6	Electric Range	1~9	Electric Standard 1 → 115V/60Hz                      6 → 220~240V/50Hz 2 → 220V/60Hz                      7 → 110V, 50/60Hz 3 → 208~230V/60Hz                8 → 380~415V/50Hz 5 → 200~220V/50Hz                9 → 380~415V/60Hz																																																																																				
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9	LG/OEM Brand	A~Z	L: LG Brand                                      M: 1st OEM Brand G: 2nd LG Brand                                N: 2nd OEM Brand																																																																																				

# 2003~2005

1	2	-	3	4	5	6	7	8	9	10
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Code	Type	Code of Model	Meaning																																								
1	Producing Center, Refrigerant	A~Z	L: Chang-won R22 A: Chang-won R410A C: Chang-won R407C T: China K: Turkey R22 E: Turkey R410A H: Thailand N: India Z: Brazil D: Indonesia M: Mexico V: Vietnam S: Out Sourcing																																								
2	Product Type	A~Z	S: Split Type Air Conditioner																																								
3	Cooling/Heating/Inverter	A~Z	C: Cooling only H: Heat pump X: C/O + E/Heater Z: H/P + E/Heater V: AC Inverter C/O N: AC Inverter H/P Q: DC Inverter C/O W: DC Inverter H/P																																								
4, 5	Capacity	0~9	Cooling/Heating Capacity Ex. "09" → 9,000 Btu/h																																								
6	Electric Range	1~9 A~Z	1: 115V/60Hz, A: 220V, 50Hz, 3Phase 2: 220V/60Hz B: 208~230V, 60Hz, 3Phase 3: 208-230V/60Hz C: 575V, 50Hz, 3Phase 5: 200-220V/50Hz D: 440~460, 60Hz, 3Phase 6: 220-240V/50Hz E: 265V, 60Hz 7: 110V, 50/60Hz F: 200V, 50/60Hz 8: 380-415V/50Hz 9: 380-415V/60Hz																																								
7	Chassis	A~Z	Name of Chassis of Unit Ex. LSP → SP Chassis																																								
8	Look	A~Z	Look, Color (Artcool Model)																																								
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# Safety Precautions



To prevent injury to the user or other people and property damage, the following instructions must be followed.

■ Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

**⚠ WARNING** This symbol indicates the possibility of death or serious injury.

**⚠ CAUTION** This symbol indicates the possibility of injury or damage to properties only.

■ Meanings of symbols used in this manual are as shown below.

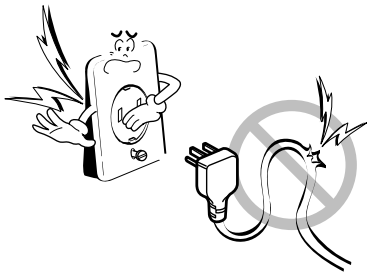
	<b>Be sure not to do.</b>
	<b>Be sure to follow the instruction.</b>

## ⚠ WARNING

### ■ Installation

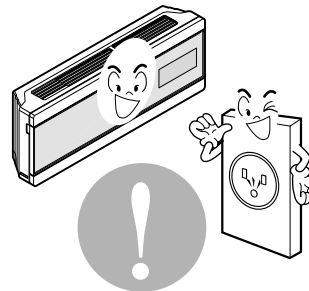
**Do not use damaged power cords, plugs, or a loose socket.**

- There is risk of fire of electric shock.



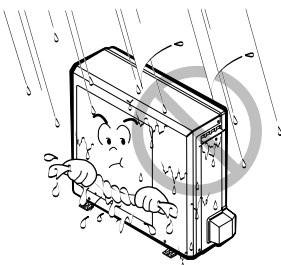
**Always use the power plug and socket with the ground terminal.**

- There is risk of electric shock.



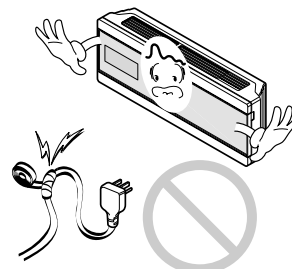
**Install the panel and the cover of control box securely.**

- There is risk of fire of electric shock.



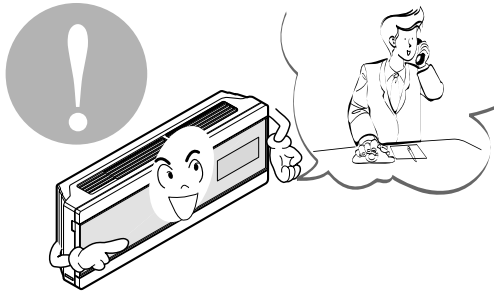
**.Do not modify or extend the power cord.**

- No grounding may cause electric shock.



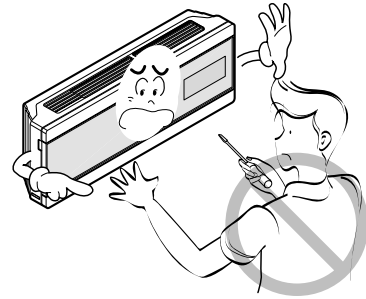
**For re-installation of the installed product, always contact a dealer or an authorized service center.**

- There is risk of fire, electric shock, explosion, or injury.



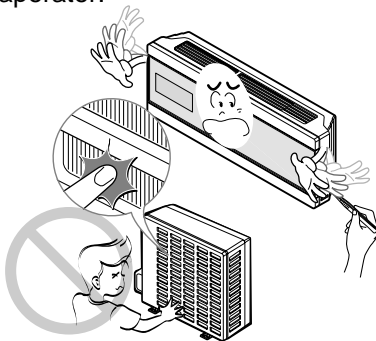
**Do not install, remove, or re-install the unit by yourself.**

- There is risk of fire, electric shock, explosion, or injury.



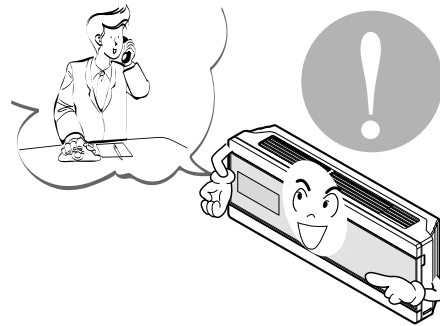
**Be cautious when unpacking and installing the product.**

- Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.



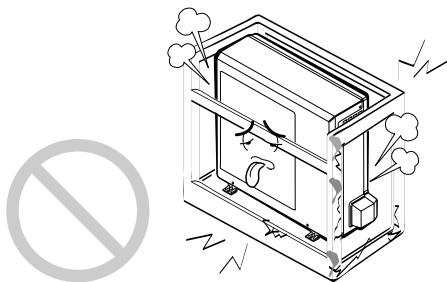
**For installation, always contact the dealer or an Authorized service center**

- There is risk of fire, electric shock, explosion, or injury.



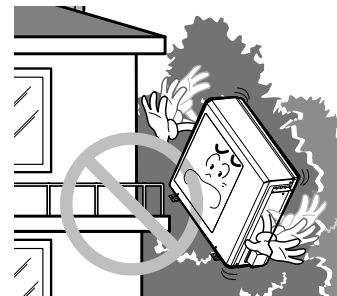
**Do not install the product on a defective installation stand.**

- It may cause injury, accident, or damage to the product.



**Be sure the installation area does not deteriorate with age.**

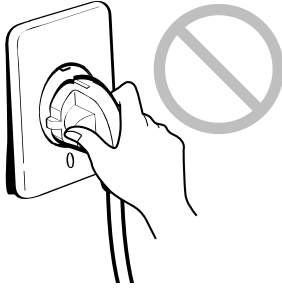
- If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.



## ■ Operation

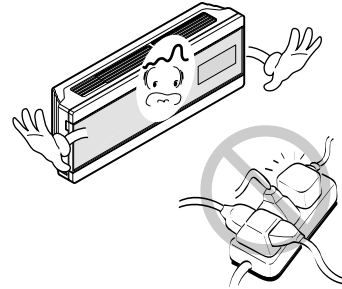
**Do not turn the air-conditioner ON or OFF by plugging or unplugging the power plug.**

- There is risk of fire or electrical shock.



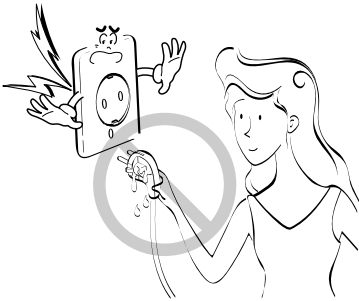
**Use a dedicated outlet for this appliance.**

- There is risk of fire or electrical shock.



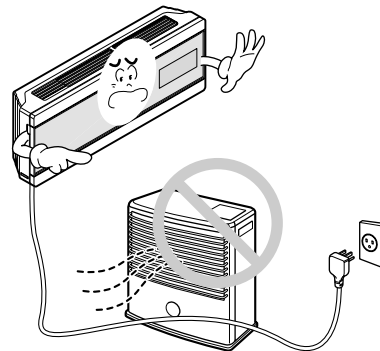
**Grasp the plug to remove the cord from the outlet. Do not touch it with wet hands.**

- There is risk of fire or electrical shock.



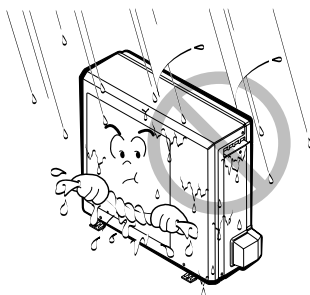
**Do not place a heater or other appliances near the power cable.**

- There is risk of fire and electric shock.



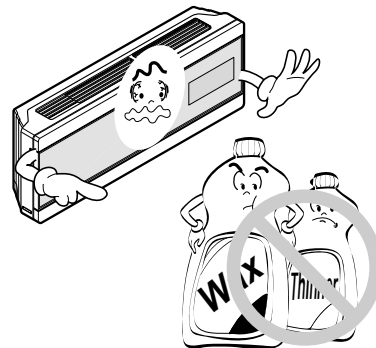
**Do not allow water to run into electrical parts.**

- There is risk of fire, failure of the product, or electric shock.



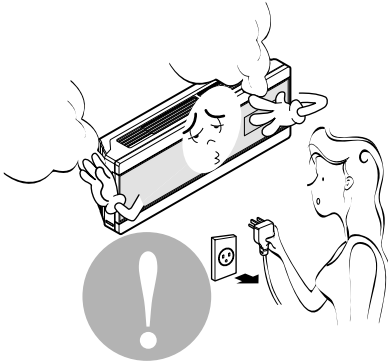
**Do not store or use flammable gas or combustibles near the air conditioner.**

- There is risk of fire or failure of product.



**Unplug the unit if strange sounds, odors, or smoke comes from it.**

- There is risk of electric shock or fire.



**Be cautious that water could not enter the product.**

- There is risk of fire, electric shock, or product damage.

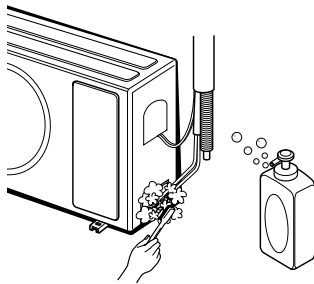


**⚠ CAUTION**

## ■ Installation

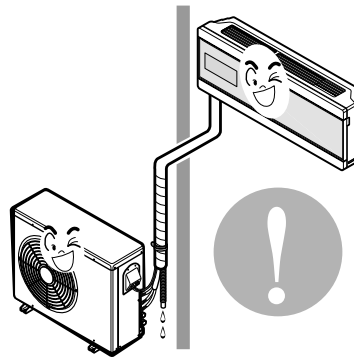
**Always check for gas (refrigerant) leakage after installation or repair of product.**

- Low refrigerant levels may cause failure of product.



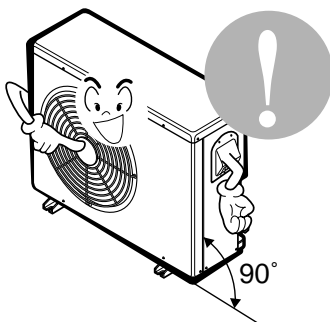
**Install the drain hose to ensure that water is drained away properly.**

- A bad connection may cause water leakage.



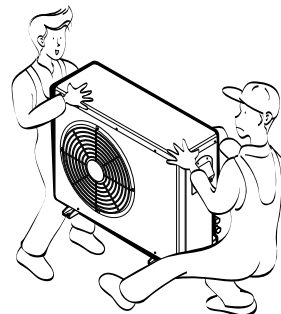
**Keep level even when installing the product.**

- To avoid vibration or water leakage.



**Use two or more people to lift and transport the air conditioner.**

- Avoid personal injury.



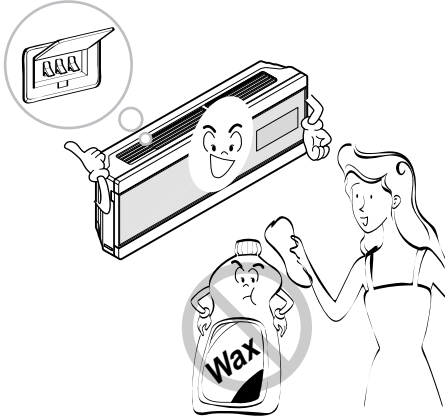
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## ■ Operation

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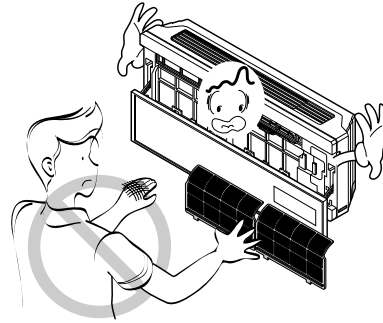
Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.

- There is risk of fire, electric shock, or damage to the plastic parts of the product.



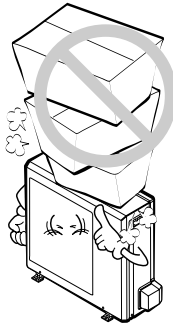
Do not touch the metal parts of the product when removing the air filter. They are very sharp!

- There is risk of personal injury.



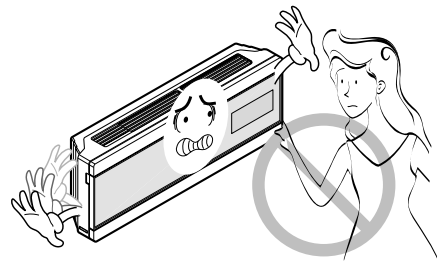
Do not step on or put anything on the product. (outdoor units)

- There is risk of personal injury and failure of product.



Do not insert hands or other objects through the air inlet or outlet while the air conditioner is plugged in.

- There are sharp and moving parts that could cause personal injury.



# Dimensions

## Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.

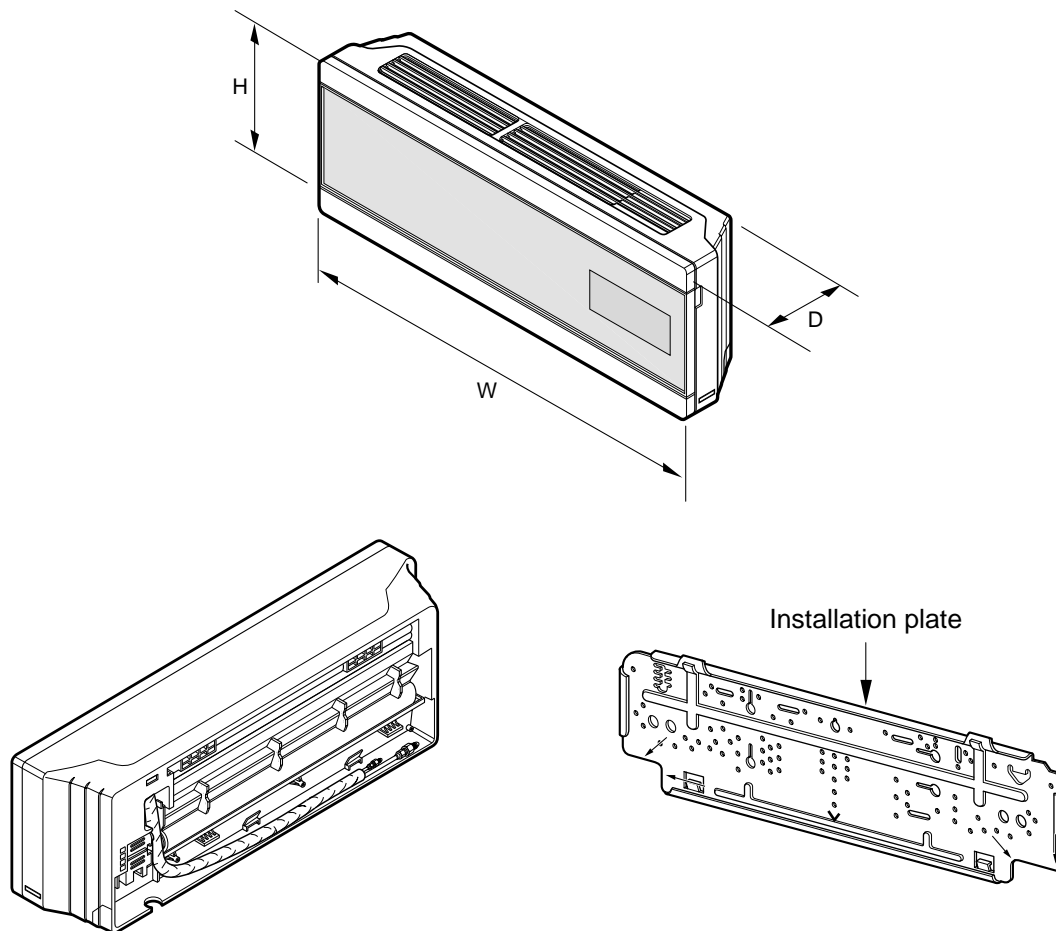


This symbol alerts you to hazards that could cause harm to the air conditioner.



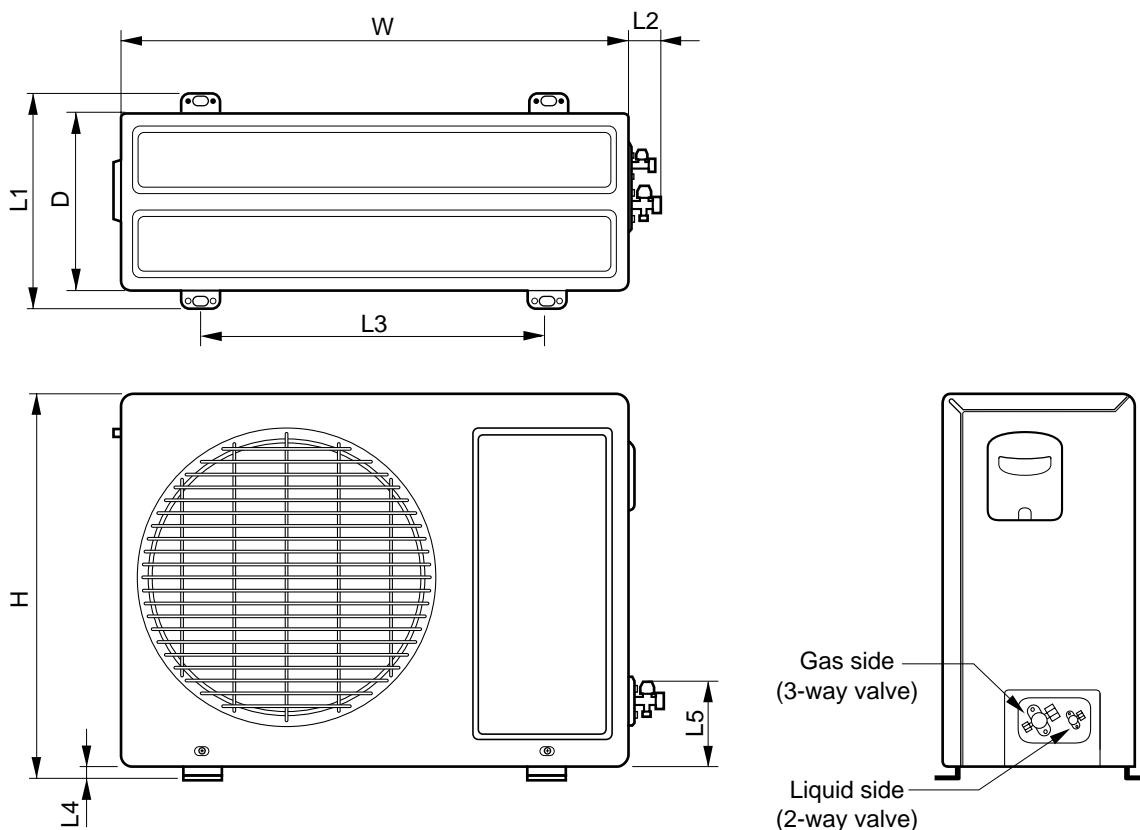
This symbol indicates special notes.

## Indoor Unit



MODEL		9k, 12k Btu Series
DIM	Unit	
W	mm	1030
H	mm	290
D	mm	153

**Outdoor Unit**



DIM	MODEL	
	unit	9k, 12k Btu Series
W	mm	770
H	mm	540
D	mm	245
L1	mm	287
L2	mm	64
L3	mm	518
L4	mm	10
L5	mm	100

# Product Specifications

**Table-1**

Item		Model Name		AS-W096U_0	AS-W126U_0	AS-W096U_1	AS-W126U_1
		Unit					
Cooling Capacity	MIN	W	645	820	645	820	
		kcal/h.(W)	554	706	554	706	
		Btu/h.	2,200	2,800	2,200	2,800	
	Type	W	2,637	3,516	2,637	3,516	
		kcal/h.(W)	2,268	3,024	2,268	3,024	
		Btu/h.	9,000	12,000	9,000	12,000	
	Max	W	3,246	3,868	3,246	3,868	
		kcal/h.(W)	2,792	3,326	2,792	3,326	
		Btu/h.	11,080	13,200	11,080	13,200	
Heating Capacity	MIN	W	527	1,289	527	1,289	
		kcal/h.(W)	454	1,109	454	1,109	
		Btu/h.	1,800	4,400	1,800	4,400	
	Type	W	3,164	3,956	3,164	3,956	
		kcal/h.(W)	2,722	3,402	2,722	3,402	
		Btu/h.	10,800	13,500	10,800	13,500	
	Max	W	4,087	4,351	4,087	4,351	
		kcal/h.(W)	3,515	3,742	3,515	3,742	
		Btu/h.	13,950	14,850	13,950	14,850	
Power Input	Cooling	W	750	1,098	750	1,090	
	Heating	W	875	1,410	875	1,410	
Running Current	Cooling	A	3.9	5.0	3.5	5.0	
	Heating	A	4.5	6.2	4.0	6.2	
Starting Current	Cooling	A	3.9	5.0	3.5	5.0	
	Heating	A	4.5	6.2	4.0	6.2	
EER	Cooling	kcal/hW	3.0	2.8	3.0	2.8	
		Btu/h.W	12.00	10.93	12.00	10.93	
	Heating	kcal/hW	3.11	2.41	3.11	2.41	
		Btu/h.W	12.34	9.57	12.34	9.57	
COP	Cooling	W/W	3.52	3.20	3.52	3.20	
	Heating	W/W	3.62	2.81	3.62	2.81	
Power Supply	Ø,V,Hz		1,220-240,50	1,220-240,50	1,220-240,50	1,220-240,50	
Power Factor			%	97	97	97	
Air Circulation	Indoor,Max	m³/min(CFM)	9.0(318)	9.5(335)	9.0(318)	9.5(335)	
	Outdoor,Max	m³/min(CFM)	26(918)	26(918)	26(918)	26(918)	
Moisture Removal			l/h.(pts/h.)	1.5(3.2)	1.5(3.2)	1.5(3.2)	
Noise Level (Sound Pressure,1m)	Indoor,High	dB(A)±3	34	35	34	35	
		Med.	32	33	32	33	
	Outdoor,Max	Low	dB(A)±3	28	28	28	28
		dB(A)±3	48	48	48	48	
Refrigerant(R410A)Charge			770(27.1)	820(28.9)	720(25.3)	810(28.5)	
Power Cord	AWG#:P*mm²		16:3*1.0	16:3*1.5	16:3*1.5	16:3*1.5	
Connecting Cable	AWG#:P*mm²		16:4*1.0	16:4*1.5	16:4*1.0	16:4*1.5	
Connecting Tube (Ø. Socket Flare)	Liquid Side	mm(in)	6.35(1/4)	6.35(1/4)	6.35(1/4)	6.35(1/4)	
	Gas Side	mm(in)	9.52(3/8)	12.7(1/2)	9.52(3/8)	12.7(1/2)	
	Length,std	m(in)	7.5(295)	7.5(295)	7.5(295)	7.5(295)	
Drain Hose	(O.D , I.D)		mm(in)	21.5,16.0(0.85,0.63)	21.5,16.0(0.85,0.63)	21.5,16.0(0.85,0.63)	
Dimension (W*H*D)	Indoor	mm	1030*290*153	1030*290*153	1030*290*153	1030*290*153	
		inch	40.6*11.4*6.1	40.6*11.4*6.1	40.6*11.4*6.1	40.6*11.4*6.1	
	Outdoor	mm	770*540*245	770*540*245	770*540*245	770*540*245	
		inch	30.3*21.3*9.6	30.3*21.3*9.6	30.3*21.3*9.6	30.3*21.3*9.6	
Net Weight	Indoor	kg(lbs)	9.5(20.9)	9.5(20.9)	9.5(20.9)	9.5(20.9)	
	Outdoor	kg(lbs)	37(81.4)	38(83.8)	37(81.4)	38(83.8)	

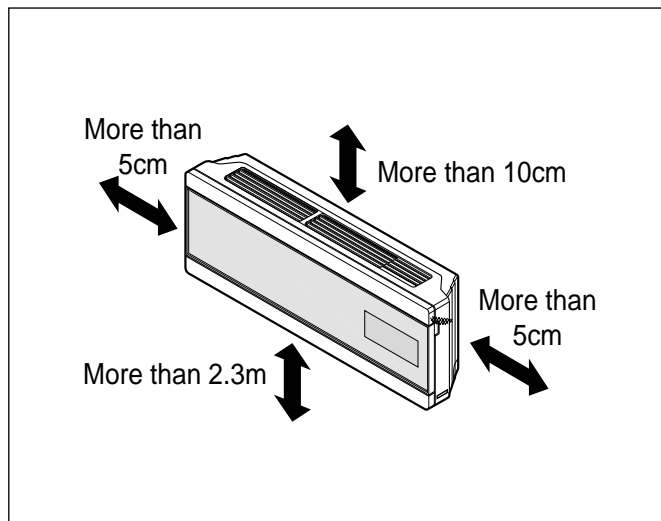


# Installation

## Select the best Location

### Indoor unit

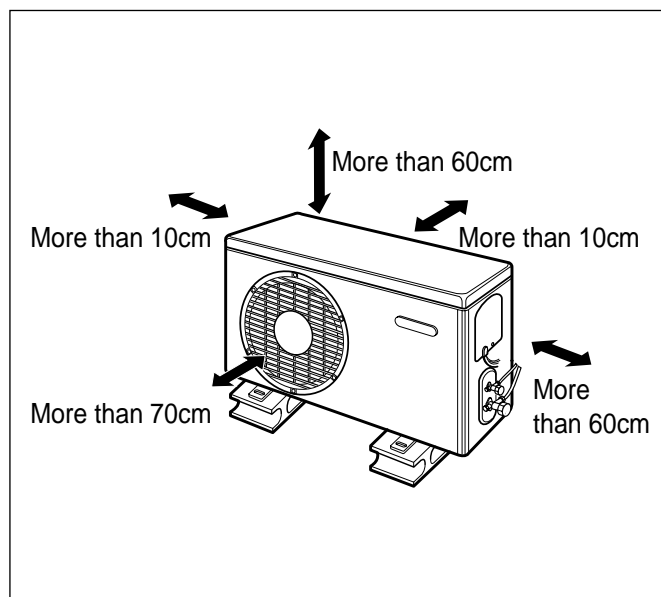
1. Do not have any heat or steam near the unit.
2. Select a place where there are no obstacles in front of the unit.
3. Make sure that condensation drainage can be conveniently routed away.
4. Do not install near a doorway.
5. Ensure that the interval between a wall and the left (or right) of the unit is more than 50cm. The unit should be installed as high as possible on the wall, allowing a minimum of 10cm from ceiling.
6. Use a stud finder to locate studs to prevent unnecessary damage to the wall.



**CAUTION:** Install the indoor unit on the wall where the height from the floor is more than 2 meters.

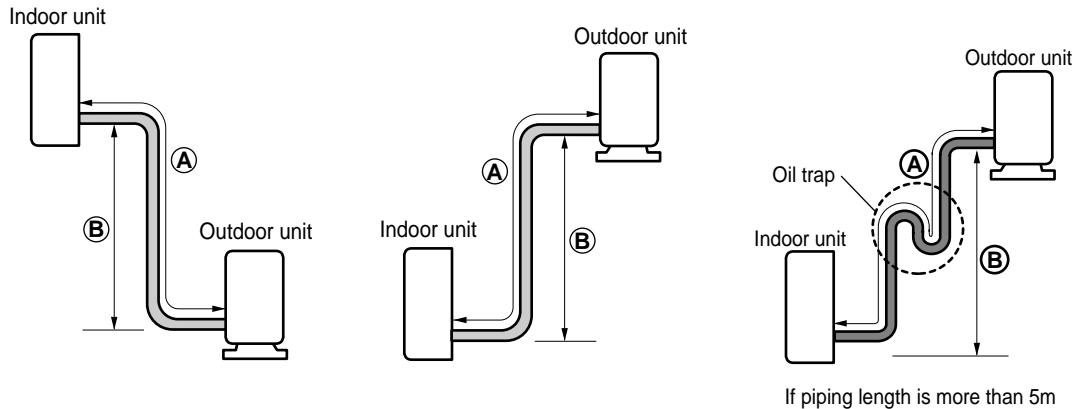
### Outdoor unit

1. If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
2. Ensure that the space around the back and sides is more than 10cm. The front of the unit should have more than 70cm of space.
3. Do not place animals and plants in the path of the warm air.
4. Take the weight of the air conditioner into account and select a place where noise and vibration are minimum.
5. Select a place where the warm air and noise from the air conditioner do not disturb neighbors.



## Piping Length and Elevation

Capacity (Btu/h)	Pipe Size		Standard Length (m)	Max. Elevation B (m)	Max. Length A (m)	Additional Refrigerant (g/m)
	GAS	LIQUID				
9k	3/8"	1/4"	4 or 5	7	15	20
12k	1/2"	1/4"	4 or 5	7	15	20

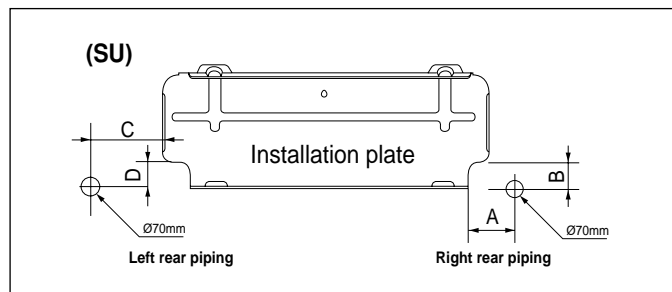
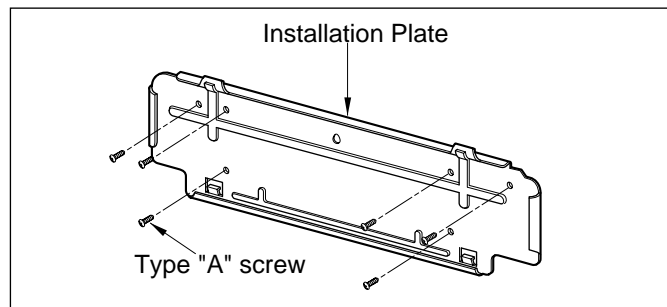


**CAUTION:** Capacity is based on standard length and maximum allowance length is on the basis of reliability. Oil trap should be installed every 5~7 meters.

## Fixing Installation Plate

The wall you select should be strong and solid enough to prevent vibration

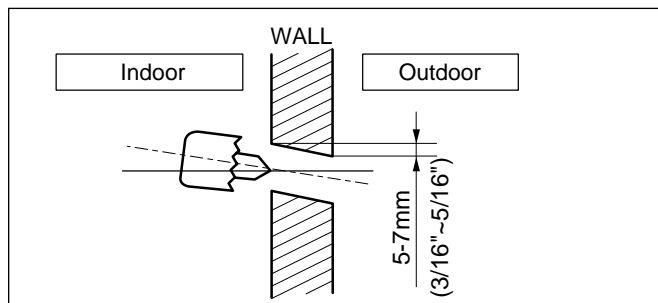
1. Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.
  - Mount the installation plate horizontally by aligning the centerline using a level.
2. Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate-routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.



CHASSIS (Grade)	Distance (mm)			
	A	B	C	D
SU (9k~12k)	92	44	67	44

## Drill a Hole in the Wall

- Drill the piping hole with a  $\varnothing 70\text{mm}$  hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.

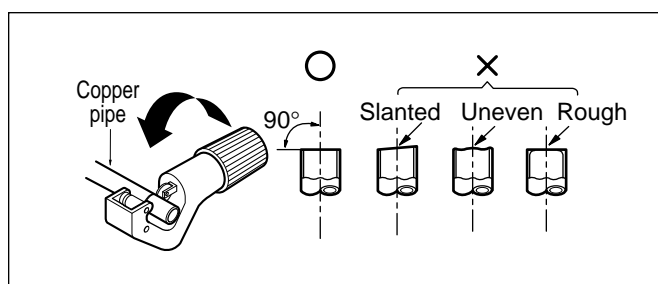


## Flaring Work

Main cause for gas leakage is due to defect in flaring work. Carry out correct flaring work in the following procedure.

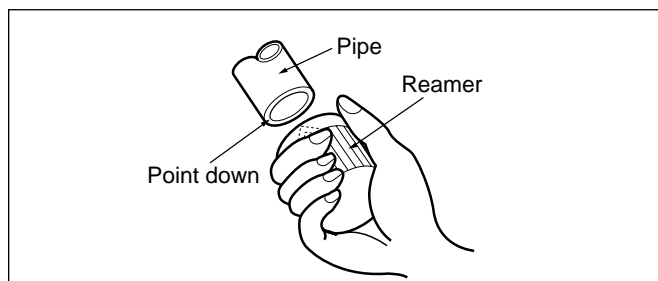
### Cut the pipes and the cable.

1. Use the piping kit accessory or the pipes purchased locally.
2. Measure the distance between the indoor and the outdoor unit.
3. Cut the pipes a little longer than measured distance.
4. Cut the cable 1.5m longer than the pipe length.



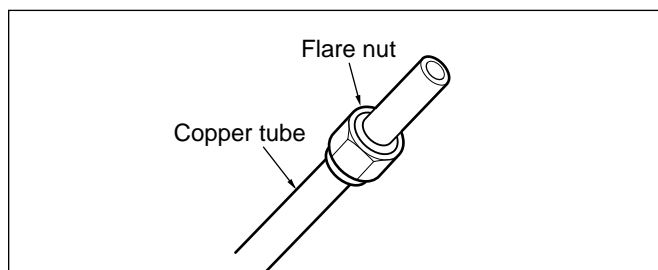
### Burrs removal

1. Completely remove all burrs from the cut cross section of pipe/tube.
2. Put the end of the copper tube/pipe in a downward direction as you remove burrs in order to avoid dropping burrs into the tubing.



### Putting nut on

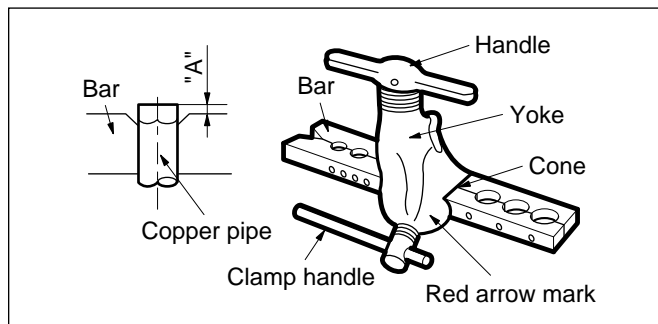
- Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal. (not possible to put them on after flaring work)



### Flaring work

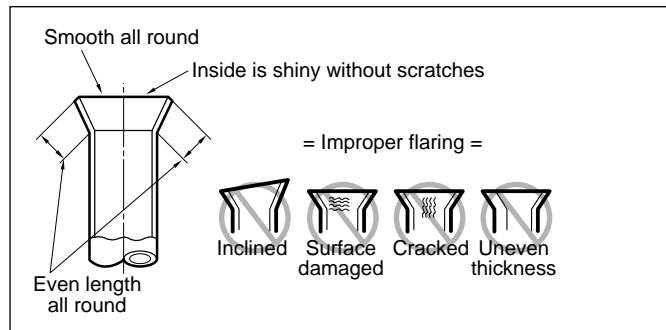
1. Firmly hold copper pipe in a die in the dimension shown in the table below.
2. Carry out flaring work with the flaring tool.

Outside diameter		A
mm	inch	mm
$\varnothing 6.35$	1/4	0~0.5
$\varnothing 9.52$	3/8	0~0.5
$\varnothing 12.7$	1/2	0~0.5
$\varnothing 15.88$	5/8	0~1.0
$\varnothing 19.05$	3/4	1.0~1.3



## Check

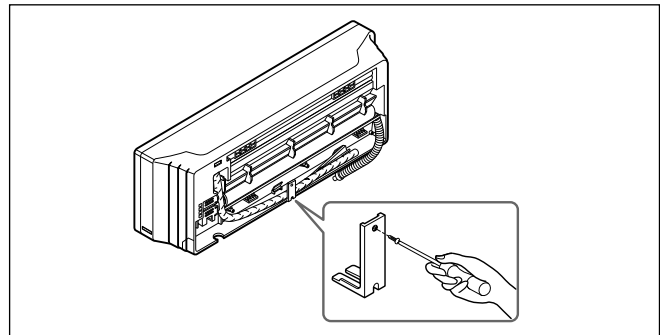
1. Compare the flared work with the figure by.
2. If a flared section is defective, cut it off and do flaring work again.



## Connecting the Piping

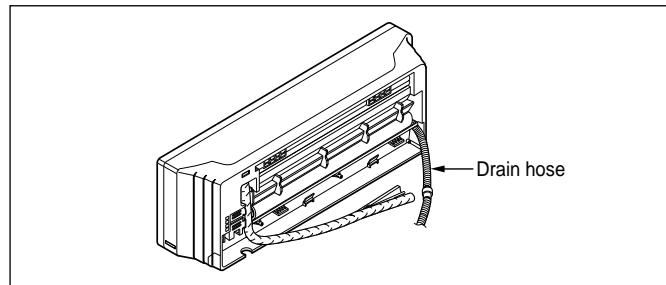
### Indoor

1. Prepare the indoor unit's piping and drain hose for installation through the wall.
2. Remove the plastic tubing retainer(see the illustration by) and pull the tubing and drain hose away from chassis.
3. Replace the plastic tubing holder in the original position.(Optional)

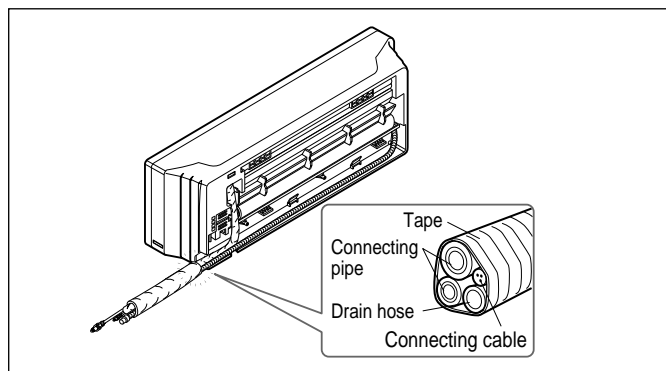


### For right rear piping

1. Route the indoor tubing and the drain hose in the direction of rear right.
2. Insert the connecting cable into the indoor unit from the outdoor unit through the piping hole.
  - Do not connect the cable to the indoor unit.
  - Make a small loop with the cable for easy connection later.
3. Tape the tubing, drain hose, and the connecting cable. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.

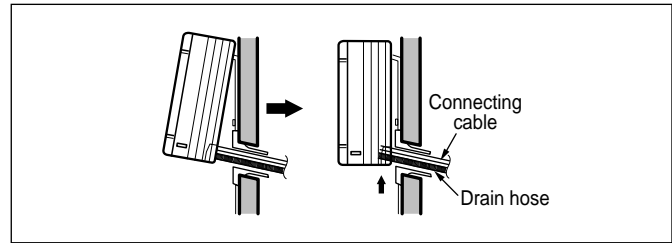


- ! CAUTION:** If the drain hose is routed inside the room, insulate the hose with an insulation material\* so that dripping from "sweating"(condensation) will not damage furniture or floors.  
 \*Foamed polyethylene or equivalent is recommended.



4. Indoor unit installation

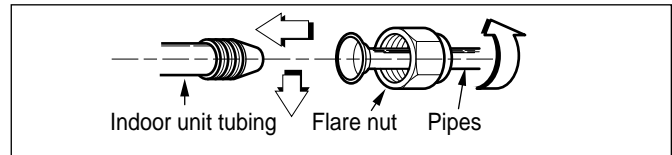
Hook the indoor unit onto the upper portion of the installation plate.(Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.) Ensure that the hooks are properly seated on the installation plate by moving it left and right.



Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots(clicking sound).

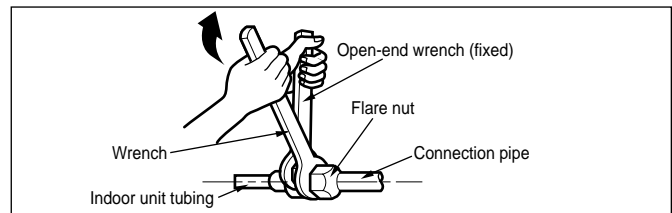
**Connecting the piping to the indoor unit and drain hose to drain pipe.**

1. Align the center of the pipes and sufficiently tighten the flare nut by hand.

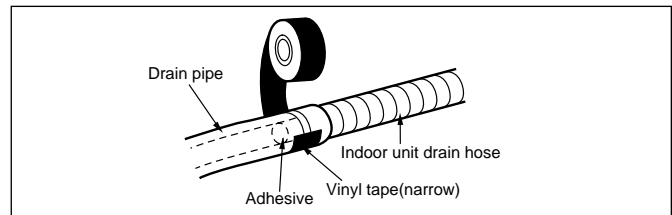


2. Tighten the flare nut with a wrench.

Outside diameter		Torque
mm	inch	kg·m
Ø6.35	1/4	1.8
Ø9.52	3/8	4.2
Ø12.7	1/2	5.5

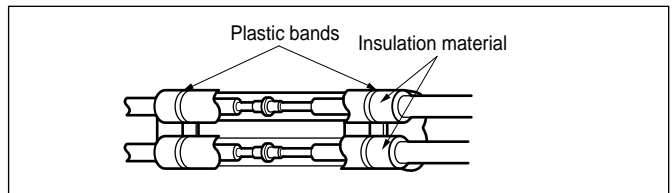


3. When extending the drain hose at the indoor unit, install the drain pipe.

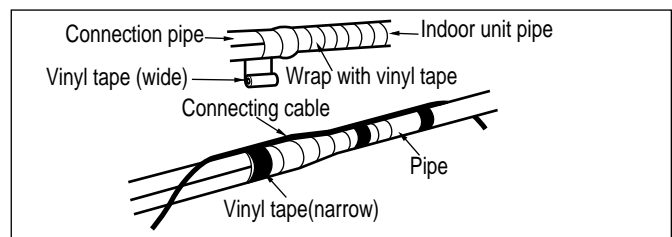


**Wrap the insulation material around the connecting portion.**

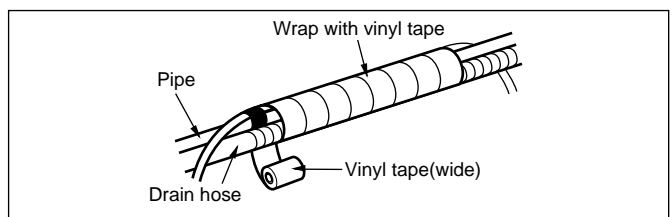
1. Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there may be no gap.



2. Wrap the area which accommodates the rear piping housing section with vinyl tape.

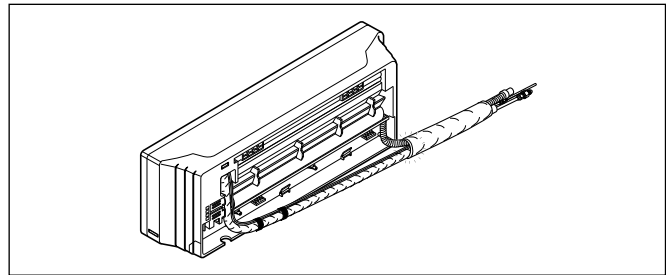
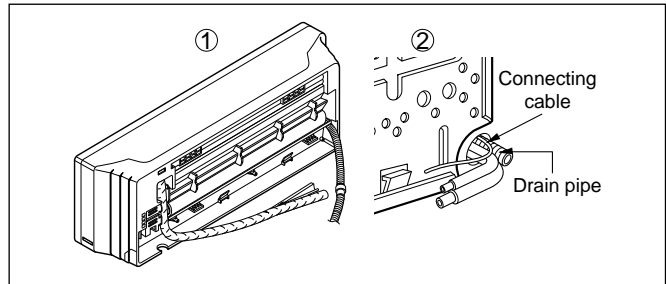


3. Bundle the piping and drain hose together by wrapping them with vinyl tape for enough to cover where they fit into the rear piping housing section.

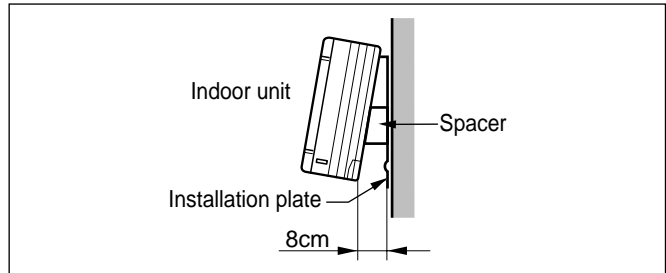


**For left rear piping**

1. Route the indoor tubing and the drain hose to the required piping hole position.
2. Insert the piping, drain hose, and the connecting cable into the piping hole.
3. Insert the connecting cable into the indoor unit.
  - Don't connect the cable to the indoor unit.
  - Make a small loop with the cable for easy connection later.
4. Tape the drain hose and the connecting cables.

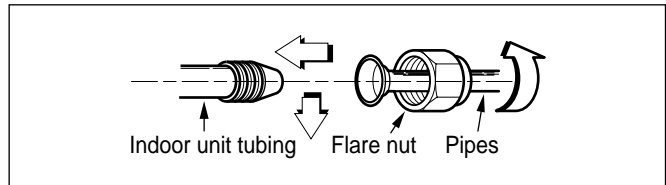


5. Indoor unit installation
  - Hang the indoor unit from the hooks at the top of the installation plate.
  - Insert the spacer etc. between the indoor unit and the installation plate and separate the bottom of the indoor unit from the wall.

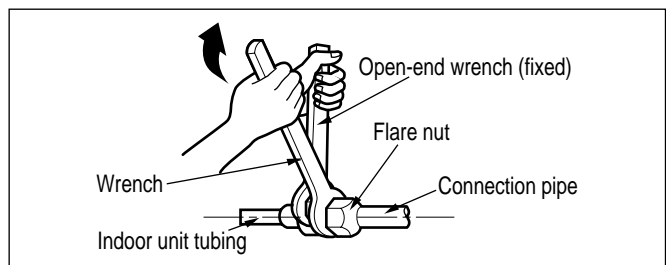


**Connecting the piping to the indoor unit and the drain hose to drain pipe.**

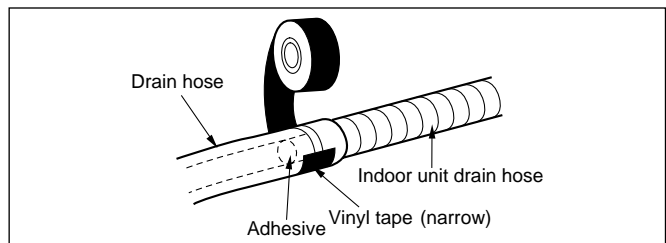
1. Align the center of the pipes and sufficiently tighten the flare nut by hand.
2. Tighten the flare nut with a wrench.



Outside diameter		Torque
mm	inch	kg·m
Ø6.35	1/4	1.8
Ø9.52	3/8	4.2
Ø12.7	1/2	5.5

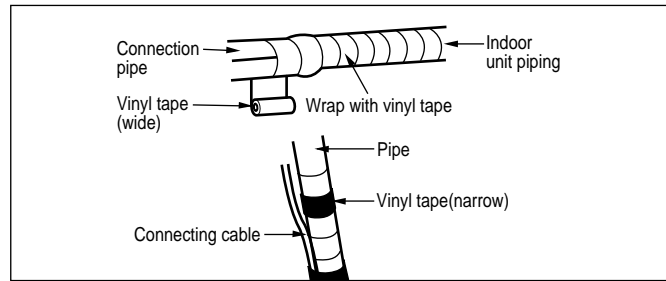
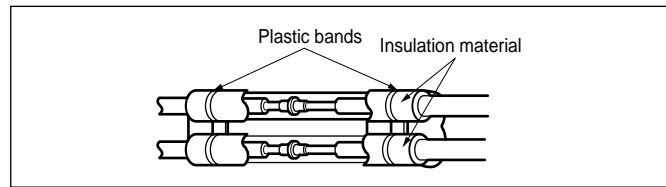


3. When extending the drain hose at the indoor unit, install the drain pipe.

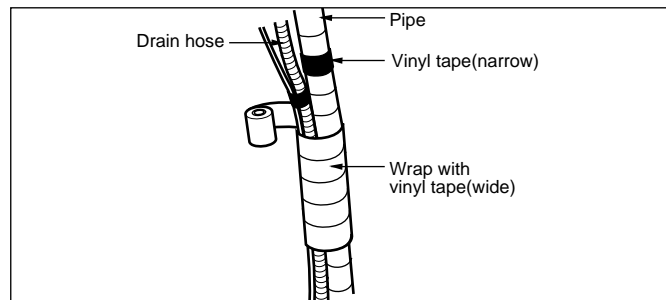


**Wrap the insulation material around the connecting portion.**

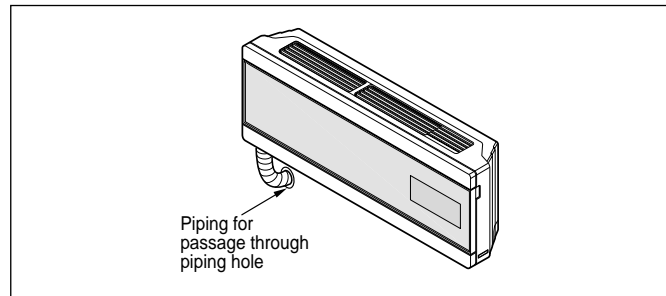
1. Overlap the connection pipe heat insulation and the indoor unit pipe heat insulation material. Bind them together with vinyl tape so that there may be no gap.
2. Wrap the area which accommodates the rear piping housing section with vinyl tape.



3. Bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.

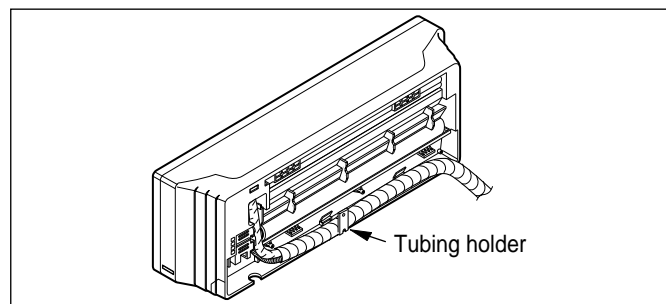


**Reroute the pipings and the drain hose across the back of the chassis.**



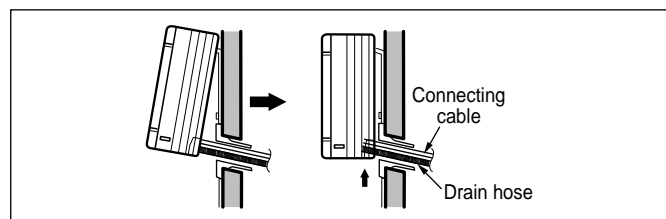
**Set the pipings and the drain hose to the back of the chassis with the tubing holder.**

- Hook the edge of tubing holder to tap on chassis and push the bottom of tubing holder to be engaged at the bottom of chassis.



**Indoor unit installation**

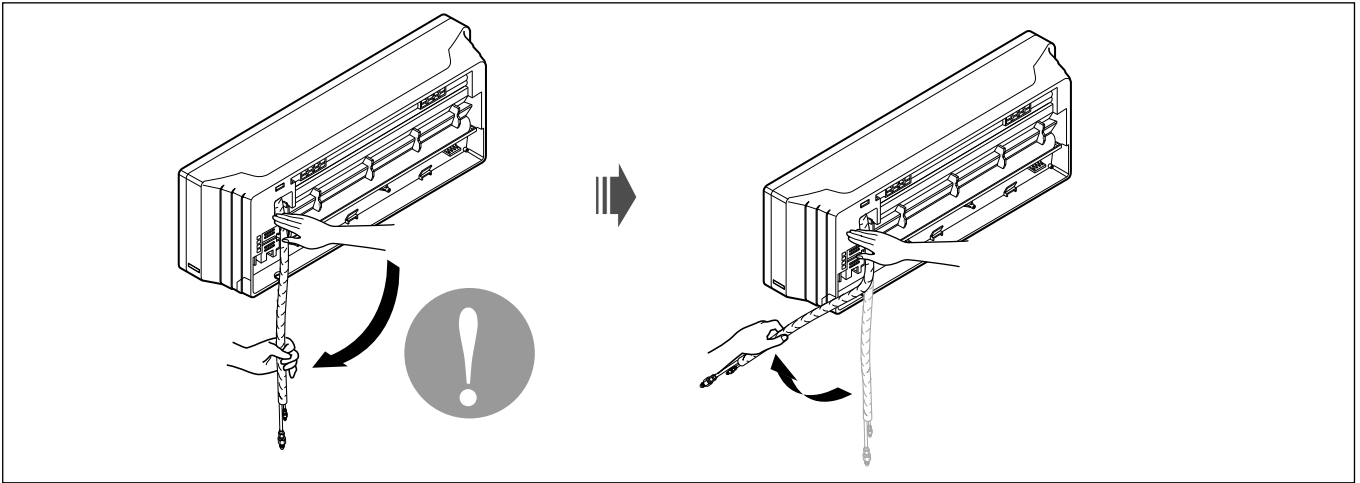
1. Remove the spacer.
2. Ensure that the hooks are properly seated on the installation plate by moving it left and right.
3. Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots (clicking sound).



**⚠ CAUTION: Installation Information**  
**For left piping. Follow the instruction below.**

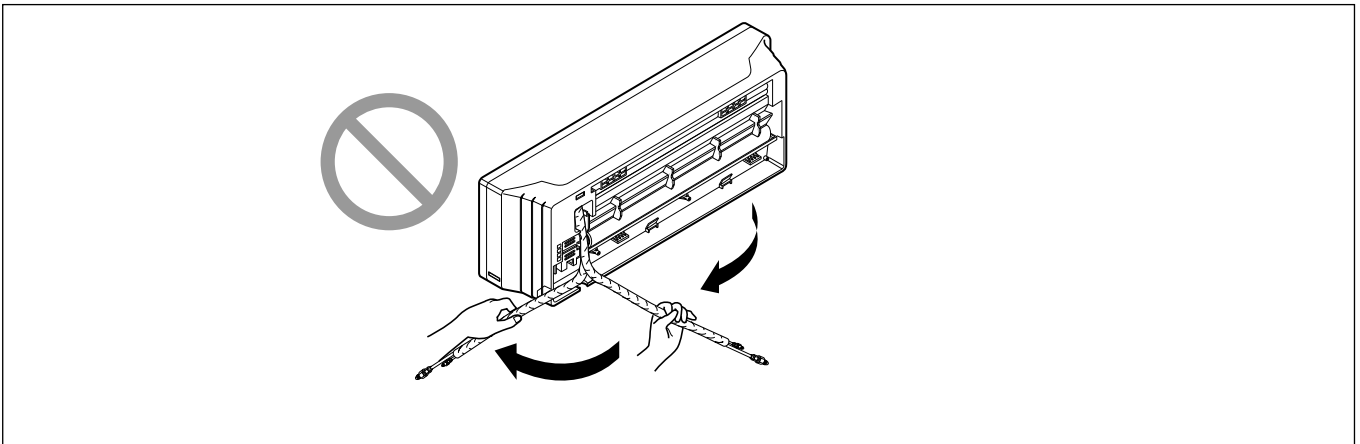
**Good case**

- Press on the upper side of clamp and unfold the tubing to downward slowly.



**Bad case**

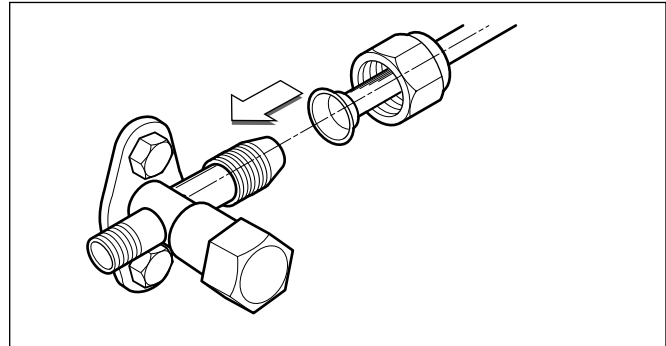
- Following bending type from right to left may cause damage to the tubing.





**Outdoor**

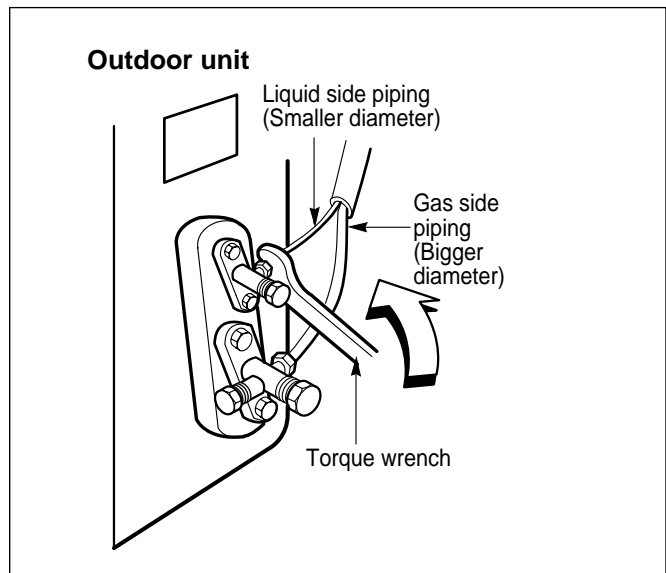
Align the center of the pipings and sufficiently tighten the flare nut by hand.



Finally, tighten the flare nut with torque wrench until the wrench clicks.

- When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

Outside diameter		Torque
mm	inch	kg.m
Ø6.35	1/4	1.8
Ø9.52	3/8	4.2
Ø12.7	1/2	5.5
Ø15.88	5/8	6.6
Ø19.05	3/4	6.6



## Connecting the Cables

### Indoor

Connect the cable to the indoor unit by connecting the wires to the terminals on the control board individually according to the outdoor unit connection. (Ensure that the color of the wires of the outdoor unit and the terminal No. are the same as those of the indoor unit.)

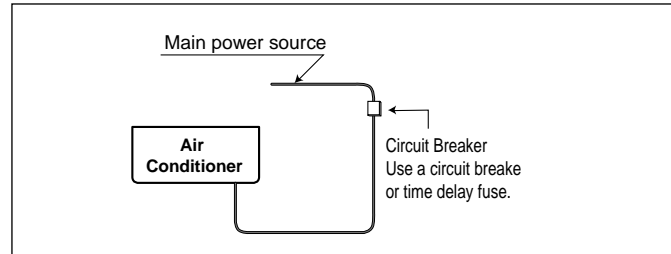


**CAUTION:**

- The above circuit diagram is subject to change without notice.
- The earth wire should be longer than the common wires.
- When installing, refer to the circuit diagram behind the panel front of the indoor unit.
- Connect the wires firmly so that they may not be pulled out easily.
- Connect the wires according to color codes, referring to the wiring diagram.



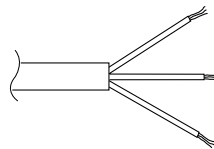
**CAUTION:** If a power plug is not used, provide a circuit breaker between power source and the unit as shown by.



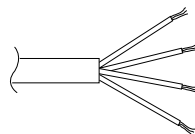
**CAUTION:** The power cord connected to the "A" unit should be selected according to the following specifications (Type "B" approved by HAR or SAA).

(mm<sup>2</sup>)

NORMAL CROSS-SECTIONAL AREA	Grade	
	9k	12k
	1.0	1.5
Unit(A)	Indoor	Indoor
Cable Type(B)	H05VV-F	H05VV-F



The power connecting cable connecting the indoor and outdoor unit should be selected according to the following specifications (Type "B" approved by HAR or SAA).



(mm<sup>2</sup>)

NORMAL CROSS-SECTIONAL AREA	Grade	
	9k	12k
	1.0	1.5
Cable Type(B)	H07RN-F	H07RN-F

(AS-W096/126U\_0 Series)

(mm<sup>2</sup>)

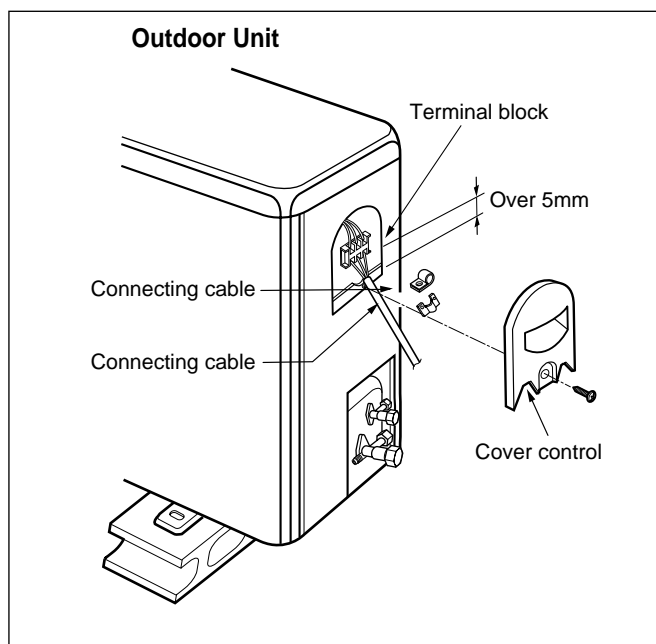
NORMAL CROSS-SECTIONAL AREA	Grade	
	9k	12k
	1.5	1.5
Cable Type(B)	H07RN-F	H07RN-F

(AS-W096/126U\_1 Series)

## Outdoor

1. Remove the control cover from the unit by loosening the screw.  
Connect the wires to the terminals on the control board individually.
2. Secure the cable onto the control board with the cord clamp.
3. Refix the control cover to the original position with the screw.
4. Use a recognized circuit breaker 20A(12k) between the power source and the unit.  
A disconnecting device to adequately disconnect all supply lines must be fitted.

Circuit Breaker (A)	Grade
	9k-12k
	15



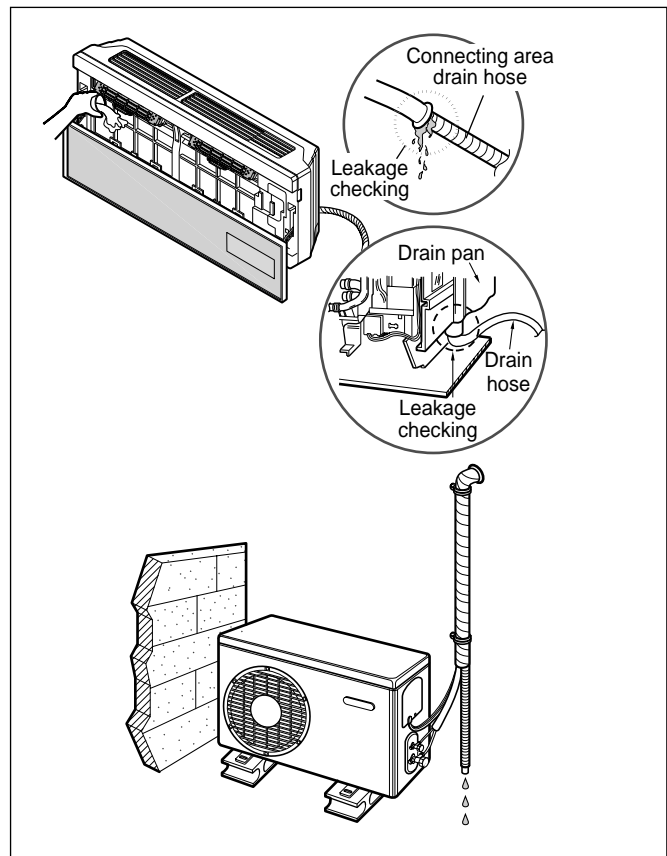
**CAUTION:** According to the confirmation of the above conditions, prepare the wiring as follows.

1. Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.
2. The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)
3. Specification of power source.
4. Confirm that electrical capacity is sufficient.
5. See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
6. Confirm that the cable thickness is as specified in the power source specification.  
(Particularly note the relation between cable length and thickness.)
7. Always install an earth leakage circuit breaker in a wet or moist area.
8. The following would be caused by voltage drop.
  - Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload.
9. The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase) conductors.

## Checking the Drainage

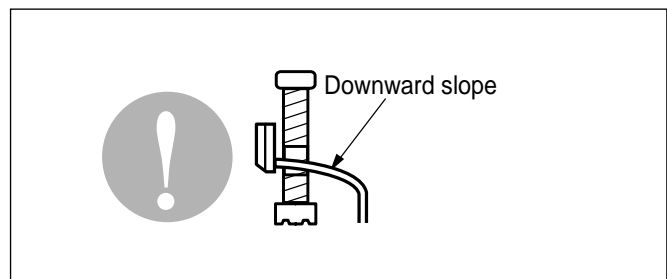
### To check the drainage.

1. Pour a glass of water on the evaporator.
2. Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

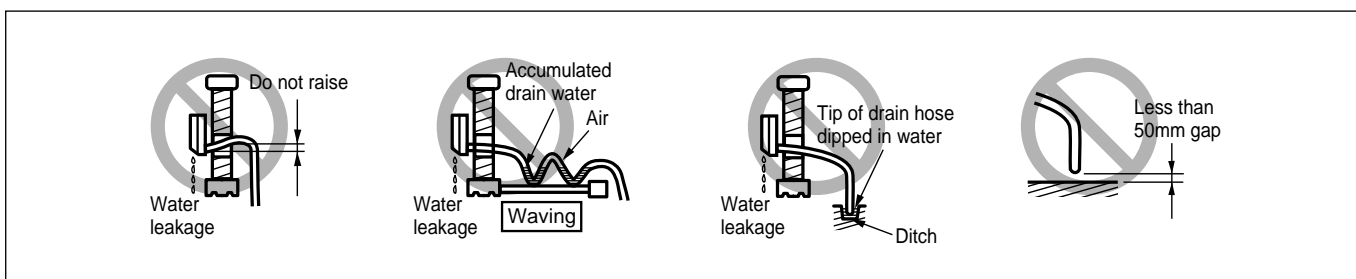


### Drain piping

1. The drain hose should point downward for easy drain flow.



2. Do not make drain piping like the following.



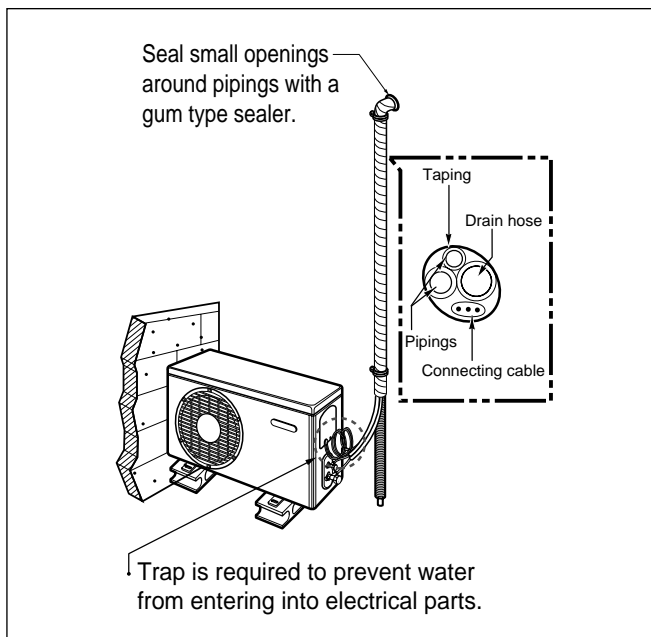
## Forming the Piping

**Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tapes.**

- If you want to connect an additional drain hose, the end of the drain outlet should be routed above the ground. Secure the drain hose appropriately.

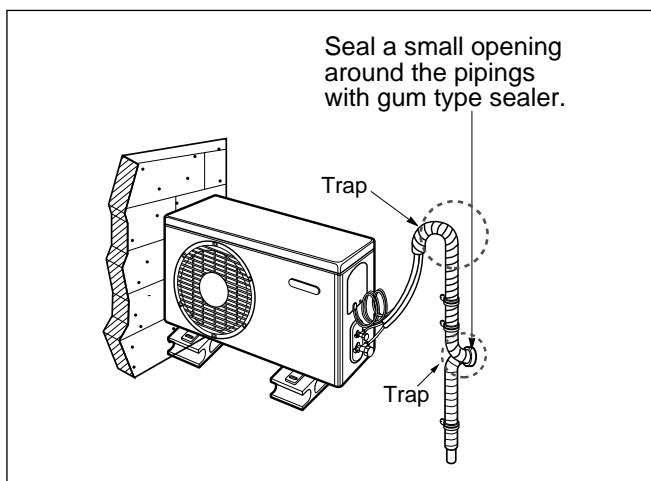
**In cases where the outdoor unit is installed below the indoor unit perform the following.**

1. Tape the piping, drain hose and connecting cable from down to up.
2. Secure the tapped piping along the exterior wall using saddle or equivalent.



**In cases where the Outdoor unit is installed above the Indoor unit perform the following.**

1. Tape the piping and connecting cable from down to up.
2. Secure the taped piping along the exterior wall. Form a trap to prevent water entering the room.
3. Fix the piping onto the wall by saddle or equivalent.



## Air Purging

### Air purging

The air and moisture remaining in the refrigerant system have undesirable effects as indicated below.

1. Pressure in the system rises.
2. Operating current rises.
3. Cooling(or heating) efficiency drops.
4. Moisture in the refrigerant circuit may freeze and block capillary tubing.
5. Water may lead to corrosion of parts in the refrigeration system.

Therefore, after evacuating the system, take a leak test for the piping and tubing between the indoor and outdoor unit.

### Air purging with vacuum pump

#### 1. Preparation

- Check that each tube(both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Note that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

#### 2. Leak test

- Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this service port with charge hoses.

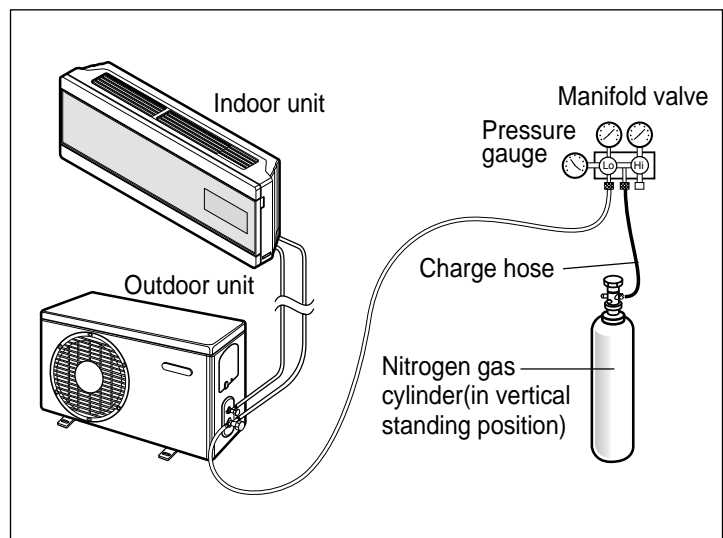
**CAUTION:** Be sure to use a manifold valve for air purging. If it is not available, use a stop valve for this purpose. The "Hi" knob of the manifold valve must always be kept close.

- Pressurize the system to no more than 150 P.S.I.G. with dry nitrogen gas and close the cylinder valve when the gauge reading reached 150 P.S.I.G. Next, test for leaks with liquid soap.

**CAUTION:** To avoid nitrogen entering the refrigerant system in a liquid state, the top of the cylinder must be higher than its bottom when you pressurize the system. Usually, the cylinder is used in a vertical standing position.

1. Do a leak test of all joints of the tubing(both indoor and outdoor) and both gas and liquid side service valves. Bubbles indicate a leak. Be sure to wipe off the soap with a clean cloth.

2. After the system is found to be free of leaks, relieve the nitrogen pressure by loosening the charge hose connector at the nitrogen cylinder. When the system pressure is reduced to normal, disconnect the hose from the cylinder.



### Soap water method

1. Remove the caps from the 2-way and 3-way valves.
2. Remove the service-port cap from the 3-way valve.
3. To open the 2-way valve turn the valve stem counterclockwise approximately 90°, wait for about 2~3 sec, and close it.
4. Apply a soap water or a liquid neutral detergent on the indoor unit connection or outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping.
5. If bubbles come out, the pipes have leakage

### Evacuation

1. Connect the charge hose end described in the preceding steps to the vacuum pump to evacuate the tubing and indoor unit.

Confirm the "Lo" knob of the manifold valve is open. Then, run the vacuum pump.

The operation time for evacuation varies with tubing length and capacity of the pump. The following table shows the time required for evacuation.

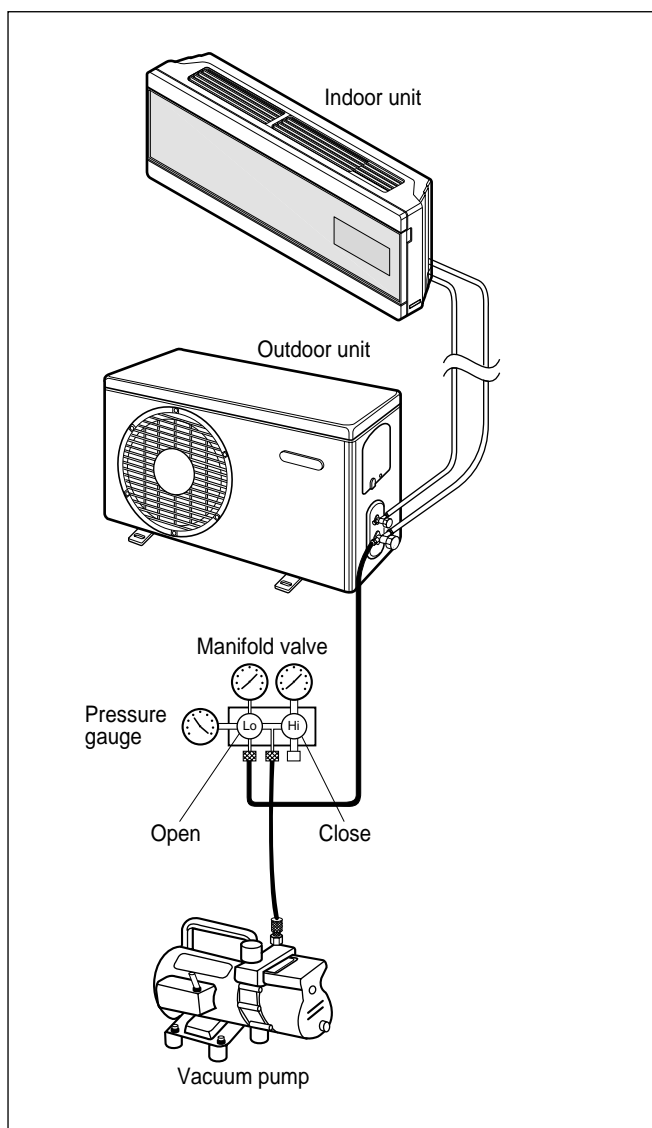
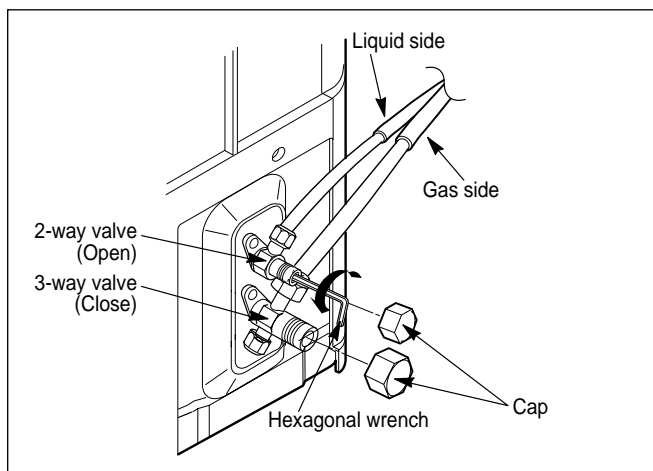
Required time for evacuation when 30 gal/h vacuum pump is used	
If tubing length is less than 10m (33 ft)	If tubing length is longer than 10m (33 ft)
10 min. or more	15 min. or more

2. When the desired vacuum is reached, close the "Lo" knob of the manifold valve and stop the vacuum pump.

### Finishing the job

1. With a service valve wrench, turn the valve stem of liquid side valve counter-clockwise to fully open the valve.
2. Turn the valve stem of gas side valve counter-clockwise to fully open the valve.
3. Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose.
4. Replace the flare nut and its bonnet on the gas side service port and fasten the flare nut securely with an adjustable wrench. This process is very important to prevent leakage from the system.
5. Replace the valve caps at both gas and liquid side service valves and fasten them tight.

This completes air purging with a vacuum pump. The air conditioner is now ready to test run.



## Test Running

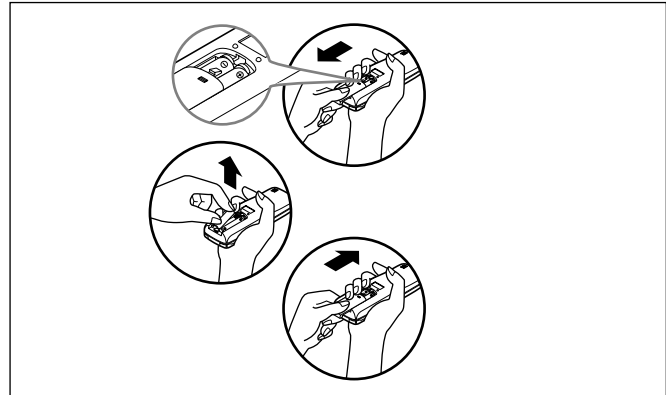
1. Check that all tubing and wiring are properly connected.
2. Check that the gas and liquid side service valves are fully open.

### Prepare remote controller

1. Remove the battery cover by pulling it according to the arrow direction.
2. Insert new batteries making sure that the (+) and (-) of battery are installed correctly.
3. Reattach the cover by pushing it back into position.

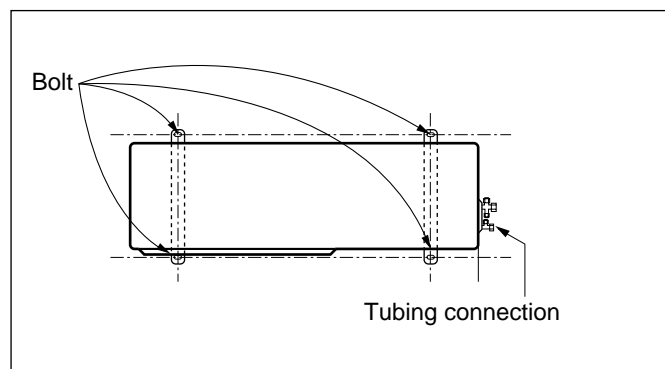
#### NOTICE

- Use 2 AAA(1.5volt) batteries. Do not use rechargeable batteries.
- Remove the batteries from the remote controller if the system is not used for a long time.



### Settlement of outdoor unit

1. Anchor the outdoor unit with a bolt and nut(ø10mm) tightly and horizontally on a concrete or rigid mount.
2. When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.
3. If the vibration of the unit is transmitted to the hose, secure the unit with an anti-vibration rubber.

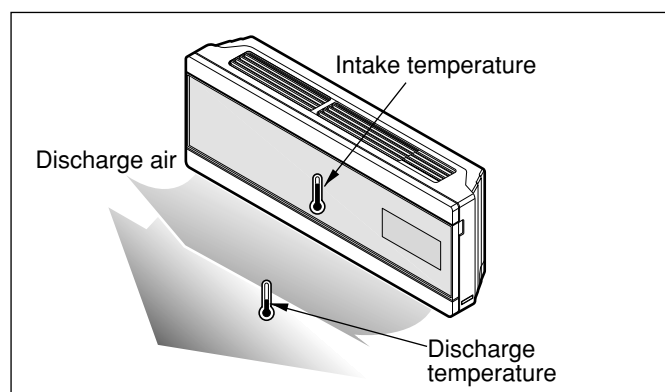


### Evaluation of the performance

Operate the unit for 15~20 minutes, then check the system refrigerant charge:

1. Measure the pressure of the gas side service valve.
2. Measure the temperature of the intake and discharge of air.
3. Ensure the difference between the intake temperature and the discharge is more than 8°C
4. For reference; the gas side pressure of optimum condition is as below.(Cooling)

The air conditioner is now ready for use.



Refrigerant	Outside ambient TEMP.	The pressure of the gas side service valve.
R-22	35°C (95°F)	4~5kg/cm <sup>2</sup> G(56.8~71.0 P.S.I.G.)
R-410A	35°C (95°F)	8.5~9.5kg/cm <sup>2</sup> G(120~135 P.S.I.G.)



**NOTICE** If the actual pressure is higher than shown, the system is most likely over-charged, and charge should be removed. If the actual pressure are lower than shown, the system is most likely undercharged, and charge should be added.

## **PUMP DOWN**

**This is performed when the unit is relocated or the refrigerant circuit is serviced.**

Pump Down means collecting all refrigerant into the outdoor unit without the loss of refrigerant.



**CAUTION: Be sure to perform Pump Down procedure in the cooling mode.**

### **Pump Down Procedure**

1. Connect a low-pressure gauge manifold hose to the charge port on the gas side service valve.
2. Open the gas side service valve halfway and purge the air in the manifold hose using the refrigerant.
3. Close the liquid side service valve(all the way).
4. Turn on the unit's operating switch and start the cooling operation.
5. When the low-pressure gauge reading becomes 1 to 0.5kg/cm<sup>2</sup> G(14.2 to 7.1 P.S.I.G.), fully close the gas side valve and then quickly turn off the unit. Now Pump Down procedure is completed, and all refrigerant is collected into the outdoor unit.

# Functions

## Indoor Unit

### Operation ON/OFF by Remote controller

### Sensing the Room Temperature

- Room temperature sensor. (Thermistor)
- Pipe temperature sensor. (Thermistor)

### Room temperature control

- Maintain the room temperature in accordance with the Setting Temp.

### Starting the Current Control

- Indoor fan is delayed for 5 sec at the starting.

### Time Delay Safety Control

- Restarting is for approx. 2 minutes.

### Indoor Fan Speed Control

- Super High, High, Med, Low

### Operation indication Lamps (LED)

- ⓪ --- Lights up in operation
- ☆ --- Lights up in Sleep Mode
- ⌚ --- Lights up in Timer Mode
- ✱ --- Lights up in Preheat Mode (for Heating Model)
- PLASMA --- Lights up in Plasma Air Clean Mode

### Soft Dry Operation Mode

- Intermittent Operation of fan at low speed or off.

### Sleep Mode Auto Control

- The fan is switched to low(Cooling), low(Heating) speed.
- The unit will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.

### Natural Air Control by CHAOS Logic

- The fan is switched to intermittent or irregular operation
- The fan speed is automatically switched from high to low speed.

### Airflow Direction Control

- The louver can be set at the desired position or swing up and down automatically.

### Auto Changeover

### Energy-Saving control(Optional)

### Horizontal airflow Direction Control(Optional)

### AUTO CLEAN(Optional)

### PLASMA

- The function will be operated while in any operation mode with selecting the function.
- The function is to be stopped while it is operating with selecting the function.

### Defrost(Deice) control (Heating)

- Both the indoor and outdoor fan stops during defrosting.

### Hot-start Control (Heating)

- The indoor fan stops until the evaporator pipe temperature will be reached at 34°C.

### Heater (Optional)

## Outdoor Unit

### Power relay control

- If power is on, it will operate to charge capacitor on controller and power relay will operate after about 2~5sec.

### Stand by control at low temp.

- If outdoor temp. is below 0°C, preheater is operating for 1~5min.
- At the initial, It will be operated compressor after 1min. for preheating.

### Active power filter control(PSC)

- The active power filter is designed to correct power factor( $\cos \theta$ ) and to regulate DC link voltage.
- It will be operated PFC circuit when the compressor freq. is over 30Hz and wattage is over 450 watt.

### Comp. Freq. control

- The final operating freq. of comp. is set the lowest freq. that limited outdoor temp., discharge pipe temp., heat-sink temp., target freq., owing to CT.

### Overheatng. Protection(Power module)

- When the temp. of power module increases to 85°C, controller decreases Freq. of Comp.

### Freq. speed control(up/down speed)

- It will be changed the drive freq. of comp. according to temp. of indoor and outdoor.

### V/F control

- It will be changed the drive voltage of comp. according to operating frequency.

### Total current control (over current protection)

### DC peak current control

### 4 way valve control

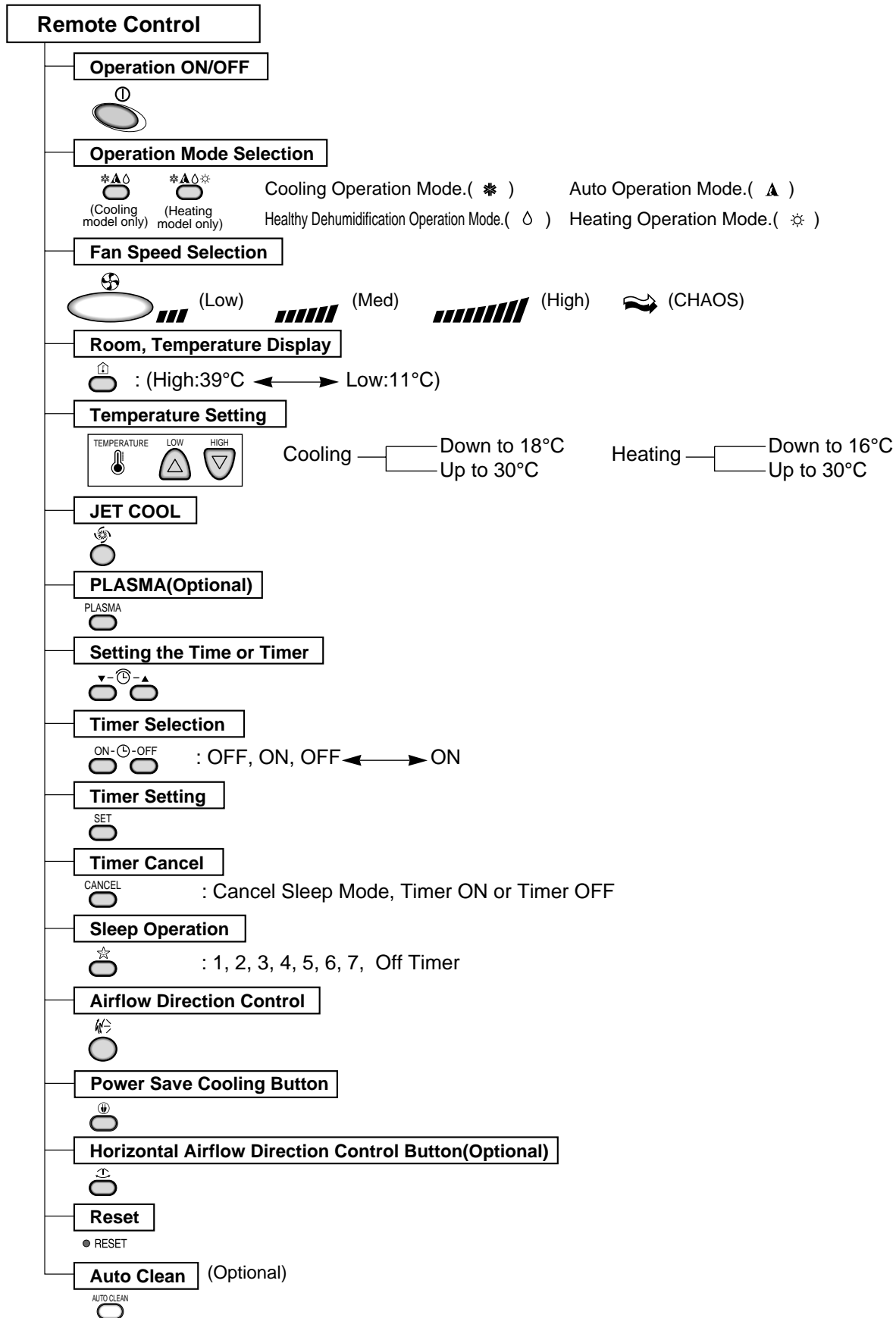
- It is only operated in the heating operation mode except defrosting operation.

### Outdoor fan motor control

- High speed
  - Although fan motor speed is middle, it will change high speed in case of below AC193V, over 45°C of outdoor temp., and over  $f_c$ ,  $f_h$  of comp. Freq.
- Middle speed
  - Nomal mode
- Low speed
  - Although fan motor speed is middle, it will change Low speed in case of over AC 270V, over 21°C (Heating Mode) of outdoor temp. below 24°C (Cooling Mode) of outdoor temp.

### Discharge pipe temp. control

### Low ambient

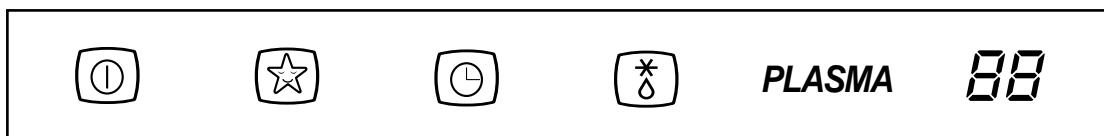


# Operation

## LED display of indoor unit

### ■ LG Brand/OEM Brand

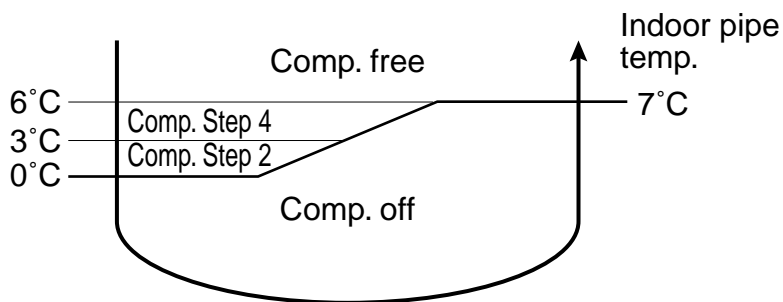
- Operation Indicator**
  - On while in appliance operation, off while in appliance pause.
  - Blinking(3sec off/0.5sec on) according to Error Code as long as the system malfunctions.
- Sleep Timer Indicator**
  - On while in sleep timer mode, off when sleep timer cancel or appliance operation pause.
- PLASMA Indicator**
  - On while in plasma mode, off when plasma mode cancel.
- Timer Indicator**
  - On while in timer mode(on/off), off when timer mode is completed or canceled.
- Preheat Indicator**
  - Off except when hot start during heating mode operation or while in defrost control.
- Setting Temp.**
  - Cooling/heating/dehumidification mode : setting temperature from remote control
  - Fuzzy operation mode : fuzzy key data(5sec on) → AI



Operation indicator	Cooling heating dehumidification	A.I operation mode						Jet (Cool, Heat)	Cleaning operation	Energy save in cooling mode	Test operation
		Standard	Too hot	Hot	Comfortable	Cold	Too cold				
Shape of display	Setting temp.	A1	-2	-1	0	1	2	Po	Co	Eo	Lo

## Protection of the evaporator pipe from frosting

- If the indoor pipe temperature is below 0°C in 7 min. after the compressor operates without pause while in cooling cycle operation mode,
  - compressor, outdoor fan are turned off.
- When indoor pipe temp. is 7°C or higher after 2 min pause of compressor
  - compressor, outdoor fan is turned on according to the condition of the room temperature.



## Protection of the indoor fan from droplet formation (Enclosure sweat and condensed disposal test)

- **Control condition** : The system operates standard operation without this condition as follows.
  - ① Setting temperature < 25°C
  - ② Indoor fan speed ≤ low speed
  - ③ Outdoor temperature < 30°C

- **Control method**

In operation for 5~20 minutes in ①, ②, ③ conditions, return to the previous COMP STEP after operation for 5~40 minutes at the COMP STEP 3.

## Cooling mode operation

- Operating frequency of compressor depend on the difference of the temperature.  
(= intake air Temp.- Compressor off Temp.)
- Compressor off temp.= setting temp.  $-0.5^{\circ}\text{C}$   
on temp. = setting temp.  $+0.5^{\circ}\text{C}$
- If compressor operates at some operating frequency, the operating frequency of compressor cannot be changed within 30 seconds.
- Condition of compressor turned off
  - When intake air temperature stay at the temperature between setting temp.  $-0.5^{\circ}\text{C}$  and setting temp.  $-1.0^{\circ}\text{C}$  for 3 minutes continuously.
  - When intake air temperature reaches below the temperature of setting temp.  $-1.0^{\circ}\text{C}$ .
- Compressor 2 minutes delay
  - The compressor can restart minimum 2 minutes later after compressor off.

### [The operating freq. step of comp.]

Temp. differences	Comp. Operating frequency
over $3.0^{\circ}\text{C}$	Step 7
over $2.5^{\circ}\text{C}$	Step 6
$2.0\sim 2.49^{\circ}\text{C}$	Step 5
$1.5\sim 1.99^{\circ}\text{C}$	Step 4
$1.0\sim 1.49^{\circ}\text{C}$	Step 3
$0.5\sim 0.99^{\circ}\text{C}$	Step 2
$0.0\sim 0.49^{\circ}\text{C}$	Step 1

### [The targeting operating freq. of comp. each model]

Model	Comp. Operating frequency						
	Step 1	Step 2	Step 3	Step 4	Step 5(Fc)	Step 6	Step 7
AS-W096U_0 Series	15	23	31	38	47	58	65
AS-W126U_0 Series	15	25	35	46	58	61	66
AS-W096U_1 Series	20	35	40	48	53	58	62
AS-W126U_1 Series	20	35	45	57	69	77	86

## Healthy Dehumidification mode operation

- When the dehumidification operation is set by the remote controller the intake air temperature is detected and the setting temp. is automatically set according to the intake air temperature.

<b>Intake air Temp.</b>	<b>Setting Temp.</b>
$26^{\circ}\text{C} \leq \text{intake air temp.}$	25°C
$24^{\circ}\text{C} \leq \text{intake air temp.} < 26^{\circ}\text{C}$	intake air temp. -1°C
$18^{\circ}\text{C} < \text{intake air temp.} < 24^{\circ}\text{C}$	intake air temp. -0.5°C
intake air temp. $\leq 18^{\circ}\text{C}$	18°C

- When intake air temp reaches above the temp of setting +1.0°C, condition of compressor same as cooling mode operation.
- When intake air temperature reaches below the temp of setting -1.0°C, compressor operate step1~step3 and indoor fan speed repeatedly operate low or stop.



## Heating mode operation

- Operating frequency of compressor depend on the difference of the temperature  
(= compressor off temp. - intake air temp.)
- Compressor off temp. = setting temp.+3.0°C  
on temp. = setting temp.
- If compressor operates at some operation frequency, the operating frequency of compressor cannot be changed within 30 seconds.
- Condition of compressor turned off
  - When intake air temperature reaches +3°C above the setting temperature.
- Condition of indoor fan turned off
  - While in compressor on:indoor pipe temp. < 30°C
- While in defrost control, between the indoor and outdoor fans are turned off.
- Compressor 2minutes delay
  - After compressor off, the compressor can restart minimum 2 minutes later.

### [ The operating freq. step of comp]

Temp. differences	Comp. Operating frequency
over 3.0°C	Step 7
2.5~3.0°C	Step 6
2.0~2.49°C	Step 5
1.5~1.99°C	Step 4
1.0~1.49°C	Step 3
0.5~0.99°C	Step 2
0.0~0.49°C	Step 1

### [The targeting operating freq. of comp. each model]

Model	Comp. Operating frequency						
	Step 1	Step 2	Step 3	Step 4	Step 5(Fc)	Step 6	Step 7
AS-W096U_0 Series	15	29	39	49	59	66	73
AS-W126U_0 Series	25	31	40	52	68	71	73
AS-W096U_1 Series	20	35	48	58	67	75	87
AS-W126U_1 Series	20	35	48	62	82	86	89

## Fuzzy mode operation(Optional)s

- When any of operation mode is not selected like the moment of the power on or when the unit turned off, the operation mode is selected.
- When determining the operation mode, the compressor, outdoor fan are off and only the indoor fan is operated for 15~20 seconds, then an operation mode is selected according to.

### Basis of determining operating mode

Indoor temp.	Operating Mode
over 24°C	Cooling
21~24°C	Healthy Dehumidification
below 21°C	Heating

### 1. Fuzzy operation for cooling

- According to the setting temperature selected by Fuzzy rule, the operating frequency of compressor is determined like cooling mode operation.
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temperature at that time.
- When the Fuzzy key(=setting temp. key) is input after the initial setting temperature is selected, the Fuzzy key value and intake air temperature at that time are compared to select the setting temperature automatically according to the fuzzy rule.
- While in Fuzzy operation, the air flow speed of the indoor fan is automatically operated by Fuzzy logic.

	Intake air temp.	Setting temp.	Fan speed
<b>at beginning</b>	over 26°C	25°C	Fuzzy airflow
	18~26°C	intake air temp. -0.5°C	
	below 18°C	18°C	
<b>during operation</b>	18~30°C	Fuzzy rule	
	below 18°C	18°C Fuzzy rule	
	over 30°C	30°C Fuzzy rule	

## 2. Fuzzy operation for Heating

- According to the setting temperature selected by Fuzzy rule, the operating frequency of compressor is determined like heating mode operation.
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temperature at that time.
- When the Fuzzy key(=setting temp. key) is input after the initial setting temperature is selected, the Fuzzy key value and intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan is automatically operated by Fuzzy logic.

	Intake Air temp.	Setting temp.	Fan speed
at beginning	over 20°C	intake air temp. +0.5°C	Fuzzy airflow
	below -20°C	20°C	
during operation	16~30°C	Fuzzy rule	
	below 16°C	16°C Fuzzy rule	
	over 30°C	30°C Fuzzy rule	

## 3. Fuzzy operation for dehumidification

- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temperature at that time.
- According to the setting temperature selected by Fuzzy rule, the operating frequency of compressor is determined like dehumidification mode operation.

	Intake Air temp.	Setting temp.	Fan speed
at beginning	over 26°C	25°C	Fuzzy airflow
	18~26°C	intake air temp. -0.5°C	
	below 18°C	18°C	
during operation	18~30°C	Fuzzy rule	
	below 18°C	18°C Fuzzy rule	
	over 30°C	30°C Fuzzy rule	

## Jet cool mode operation

- While in heating mode or Fuzzy operation, the Jet Cool key cannot be input. When it is input while in the other mode operation (cooling, dehumidification, ventilation), the Jet Cool mode is operated.
- In the Jet Cool mode, the indoor fan is operated super-high speed for 30 min. at cooling mode operation.
- In the Jet Cool mode, the room temperature is controlled to the setting temperature, 18°C.
- When the sleep timer mode input while the Jet Cool mode operation, the Jet Cool mode has the priority.
- When the Jet Cool key is input, the upper/lower vane is reset to those of the initial cooling mode and then operated in order that the air outflow could reach further.

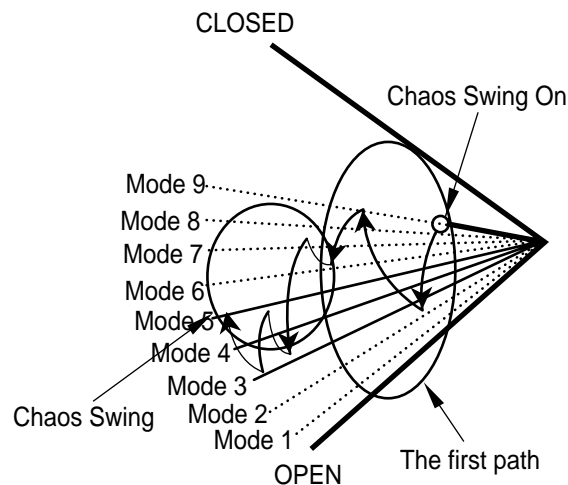
## Jet heat mode operation

- While in cooling mode or Fuzzy operation, the Jet Heat key cannot be input. When it is input while in the Heating mode operation (dehumidification), the Jet Heat mode is operated.
- In the Jet Heat mode, the indoor fan is operated super-high speed for 60 min. at Heating mode operation.
- In the Jet Heat mode, the room temperature is controlled to the setting temperature, 30°C.
- When the sleep timer mode input while the Jet Heat mode operation, the Jet Heat mode has the priority.
- When the Jet Heat key is input, the upper/lower vane is reset to those of the initial Jet heating mode and then operated in order that the air outflow could reach under flow.

## Swing mode

### 1. Chaos swing mode

- By the Chaos swing key input, the upper/lower vane automatically operates with the Chaos swing or it is fixed to the desired direction.

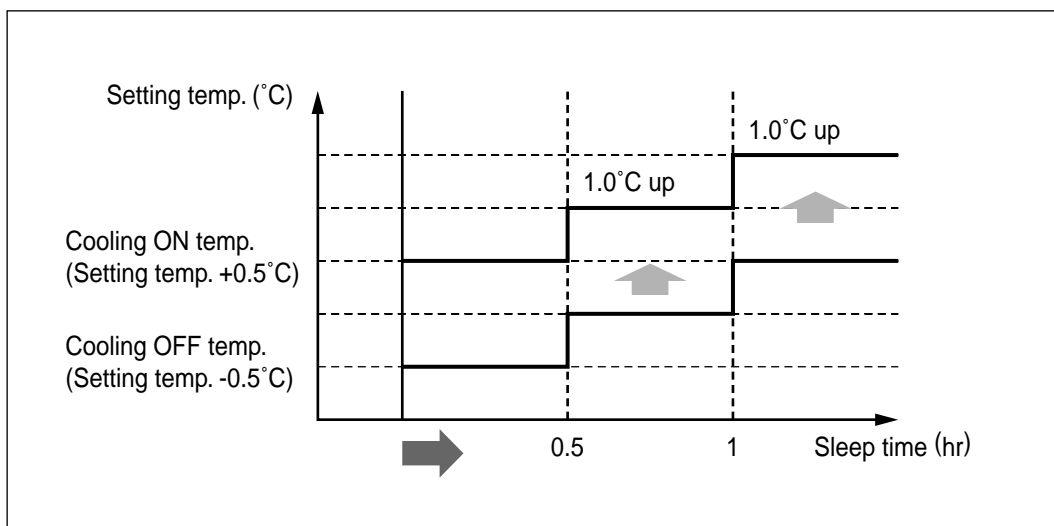


## Sleep timer operation

- When the sleep time is reached after [1,2,3,4,5,6,7hr] is input by the remote control during the operation, the operation of the appliance stops.
- When the appliance is on pause, the sleep timer mode cannot be input.

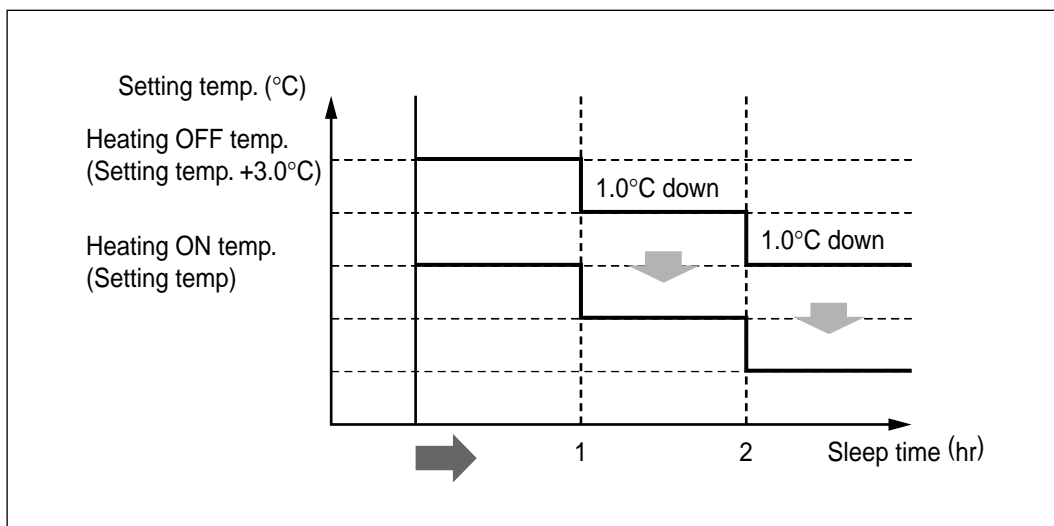
### 1. Sleep timer operation for cooling cycle

- While in cooling mode operation, 30 min. later since the start of the sleep timer, the setting temperature increase by 1°C. After another 30min. elapse, it increases by 1°C again.



### 2. Sleep timer operation for heating cycle

- While in heating mode operation, 60 min. later since the start of the sleep timer, the setting temperature decrease by 1°C. After another 60min. elapse, it decreases by 1°C again.



## Auto restarting operation

- When the power is restarted after a sudden power failure while in appliance operation, the mode before the power failure is kept on the memory and the appliance automatically operates in the mode on the memory.
- Operation mode that is kept on the memory
  - State of operation ON/OFF
  - Operation mode/setting temp./selected airflow speed
  - Sleep timer mode/remaining time of sleep timer
  - Chaos Swing

## Forced operation

- To operate the appliance by force in case that the remote control is lost, the forced operation selection switch is on the main unit of the appliance to operate the appliance in the standard conditions.
- The operation condition is set according to the outdoor temp. and intake air temperature as follows.

Indoor temp.	Operating Mode	Setting temp.	Setting speed of indoor fan
over 24°C	Cooling	22°C	High speed
21~24°C	Healthy Dehumidification	23°C	
below 21°C	Heating	24°C	

✱ The unit select before operating mode in 3 hours.

## Trial Operation

- Press the Tact Switch for compulsory operation of the main body for 3 seconds in order to operate in the trial operation mode.
  - Operation mode: Cold
  - Indoor fan: Strong wind
  - COMP frequency: Step 5
  - COMP compulsorily operates for about 18 minutes irrespective of indoor temperature.

## Protection from total current control

### ■ CT1 control

- If the operating current reaches I1, the operating frequency of the compressor decrease.
- After decreasing the operating frequency by 1step, if operating current is below I1 for 60 seconds continuously, the operating frequency of compressor increase by 1step.

### ■ CT2 control

- If the operating current of the appliance reaches I2, the compressor stop instantly and 2 minutes later the compressor restart again.
- If CT2 occurs 5 times within 1hour, the appliance turn off and display ERROR CODE 7.

Control table		* I1: Current of operating frequency down I2: Current of compressor cut off				
		I1				I2
		Outdoor temp $\geq 38^{\circ}\text{C}$		Outdoor temp $< 38^{\circ}\text{C}$		
Cooling	Heating	Cooling	Heating			
1	AS-W096U_0 Series	6.5	8.5	7	9	12
2	AS-W126U_0 Series	6.5	7.5	7	8	10
3	AS-W096U_1 Series	5.5	7	6	7.5	9
4	AS-W126U_1 Series	6	7.5	6.5	8	10

cf. I1 is set the lowest level between initial value and in case detection of dc peak current.

## Protection from DC Peak Current

### ■ DC Peak Current Error by a fault signal of IPM

- If the operating current of IPM reaches  $35\text{A} \pm 3\text{A}$ , the compressor stop instantly.
- If DC PEAK occurs 5 times within 1 hour, the appliance turns off and display ERROR CODE 6.

### ■ DC Peak Current Error by the compressor lock

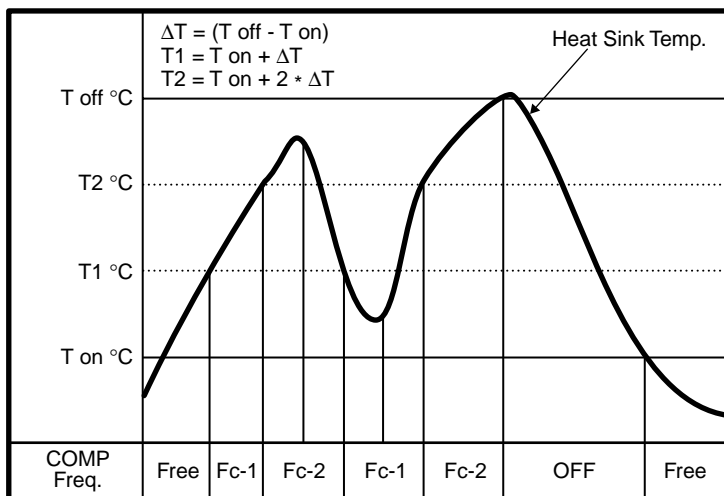
- If the DC LINK voltage below DC 140V occurs 5 times within 1 hour while the compressor is operating, the appliance turns off and display ERROR CODE 6.

### ■ DC Peak Current Error by the Outdoor Fan Lock

- If it's 5 times within 1 hour in case of the temperature of outdoor pipe TH is over  $65^{\circ}\text{C}$  while the compressor is operating, the appliance turns off and display ERROR CODE 6.

## Protection from overheating of power module

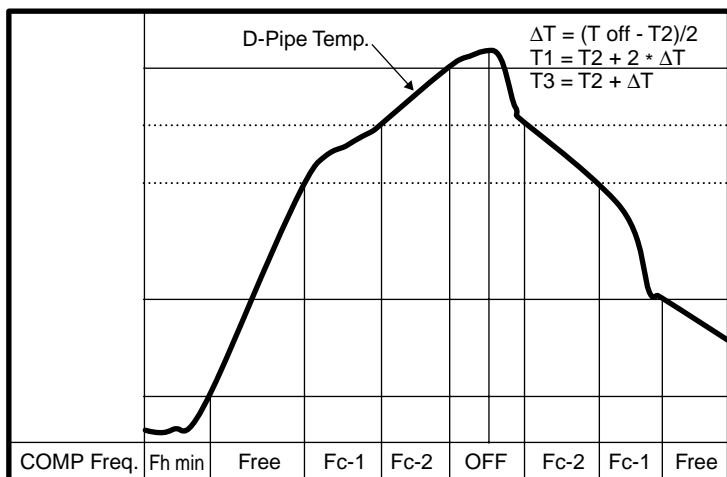
- If the temperature of the heat sink TH. reaches over Toff, the Compressor stop instantly.
- It will be limited the compressor operating frequency according to the heat sink TH.(refer to below FIG.)
- It will be blink 4 times, when the thermistor is open or short, also the temperature is over Toff.



No.	MODEL	T on	T off
1	AS-W096U_0 Series	85	95
2	AS-W126U_0 Series	85	95
3	AS-W096U_1 Series	85	95
4	AS-W126U_1 Series	85	95

## Protection from overheating of compressor

- If the temperature of the discharge pipe of compressor reaches over 130°C or below -30°C the compressor stop instantly.
- It will be limited the compressor operating frequency according to the compressor dome TH.(Refer to below Fig.)
- Temperature range by COMP SPEC varies by 10°C.



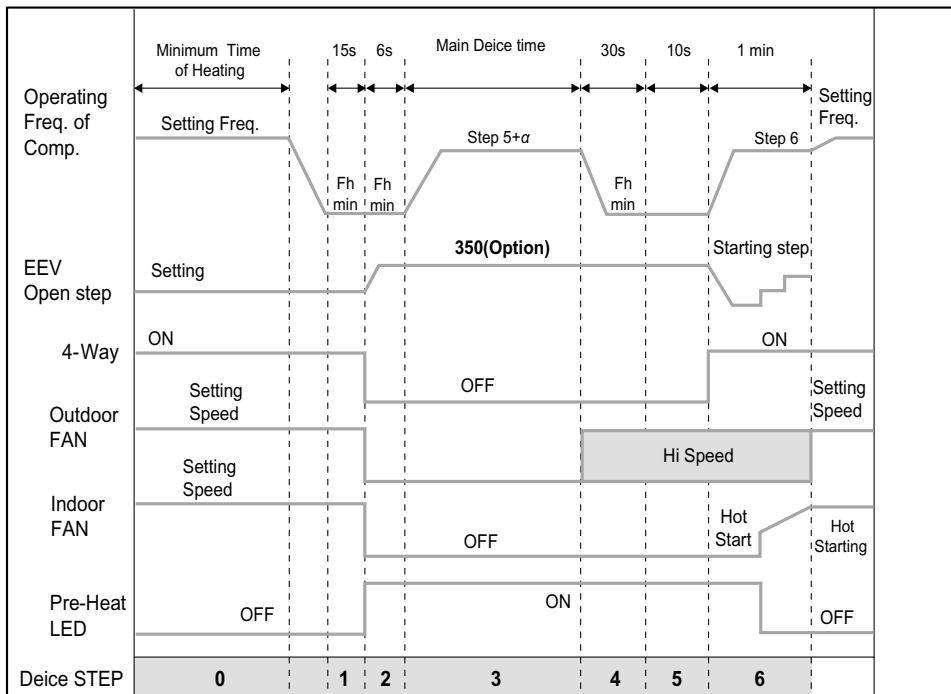
No.	MODEL	T on	T off
1	AS-W096U_0 Series	102	110
2	AS-W126U_0 Series	88	100
3	AS-W096U_1 Series	95	105
4	AS-W126U_1 Series	95	105



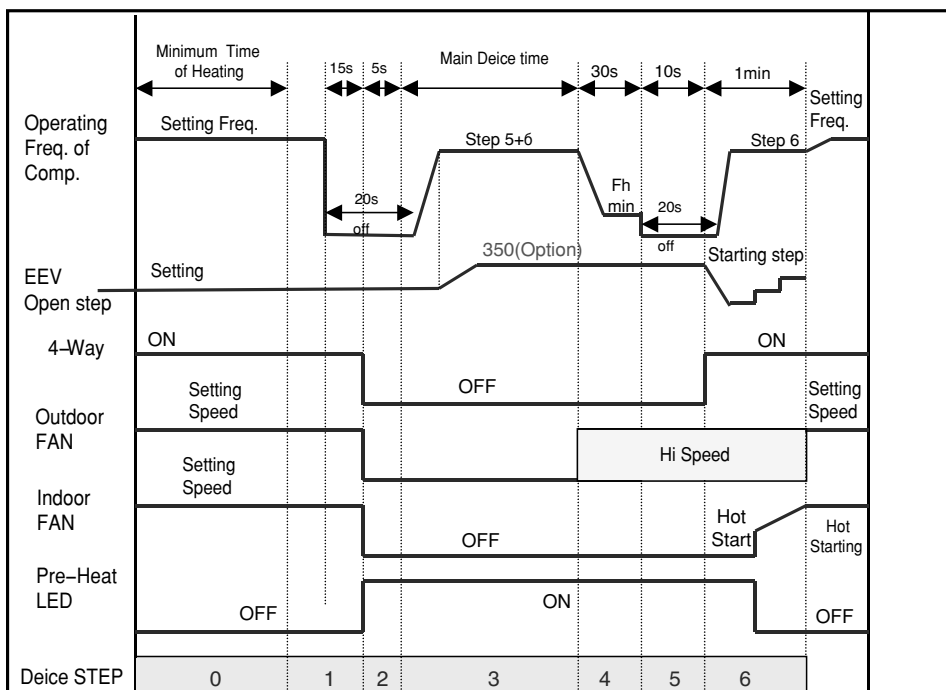
## Defrosting control

- While in heating mode operation in order to protect the evaporator pipe of the outdoor unit from freezing, reversed to cooling cycle to defrost the evaporator pipe of the outdoor unit.
- Defrosting control is available 50 minutes later since heating cycle started and the pipe temperature of outdoor unit reaches below -6°C.

### <AS-W096/126U\_0 Series>



### <AS-W096/126U\_1 Series>



## Auto Cleaning

- Function used to perform the Self Cleaning to prevent the Unit from Fungus and Bad Odors.
- Used after the Shut Down of Cooling Operation to Clean the Evaporator and keep it as fresh for the Next operation.
- During Self Cleaning the Outdoor Unit is Switched off.
- The function is easy to be operated as It is accessed through the Remote Controller.

### 1) Heat/pump Model

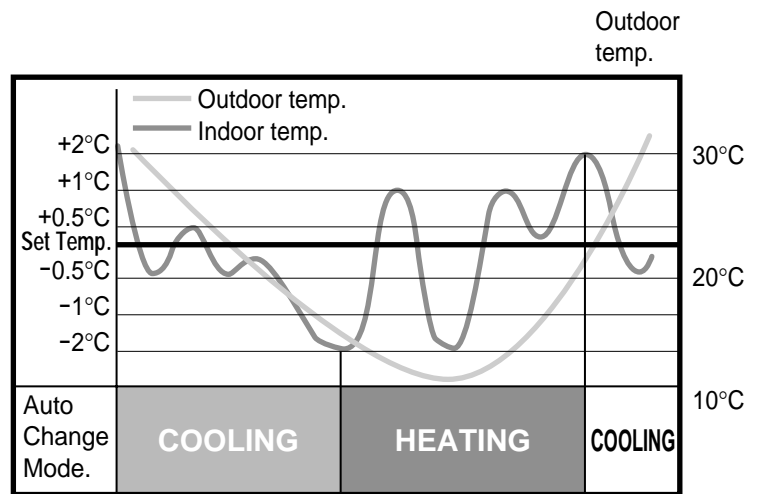
	ON	OFF			
	Cooling CYCLE		Fan	Heating	Fan
Comp.	ON		13 Min	60 Sec	120 Sec
Indoor Fan	Setting Step		Low	Low	Low
			OFF	ON	OFF

### 2) Cooling/only Model

	ON	OFF	
	Cooling CYCLE		Fan
Comp.	ON		30 Min
Indoor Fan	Setting Step		Low
			OFF

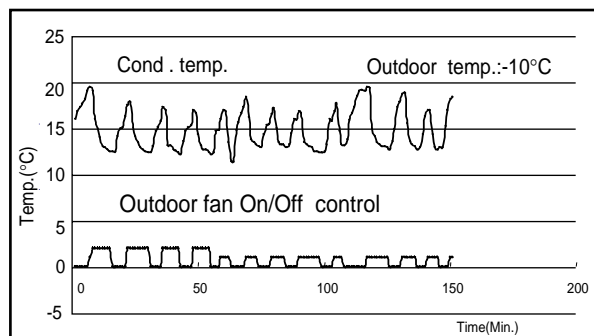
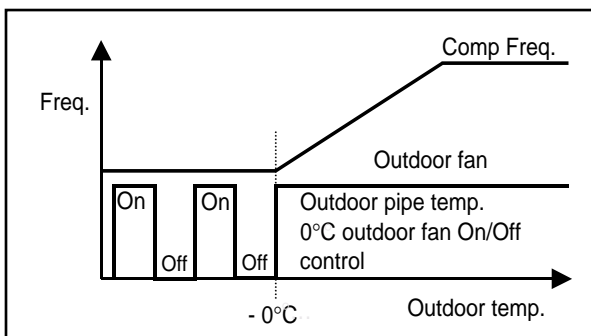
## Auto Changeover(Optional)

- While in fuzzy mode operation the air conditioner changes the operation mode automatically to keep indoor temperature.
- When room temperature vary over  $\pm 2^{\circ}\text{C}$  with respect to setting temperature, air conditioner keeps the room temperature in  $\pm 2^{\circ}\text{C}$  with respect to setting temperature by auto change mode.



## Low Ambient

- If outdoor temperature drops below certain temperature, liquid back is prevented by reducing fan speed. It can prevent frosting of evaporator and keep cooling operation
- No matter even if the outdoor temperature reaches  $-10^{\circ}\text{C}$ .
- You can Cool your room at your desired temperature all your around.



# Disassembly

## Indoor Unit

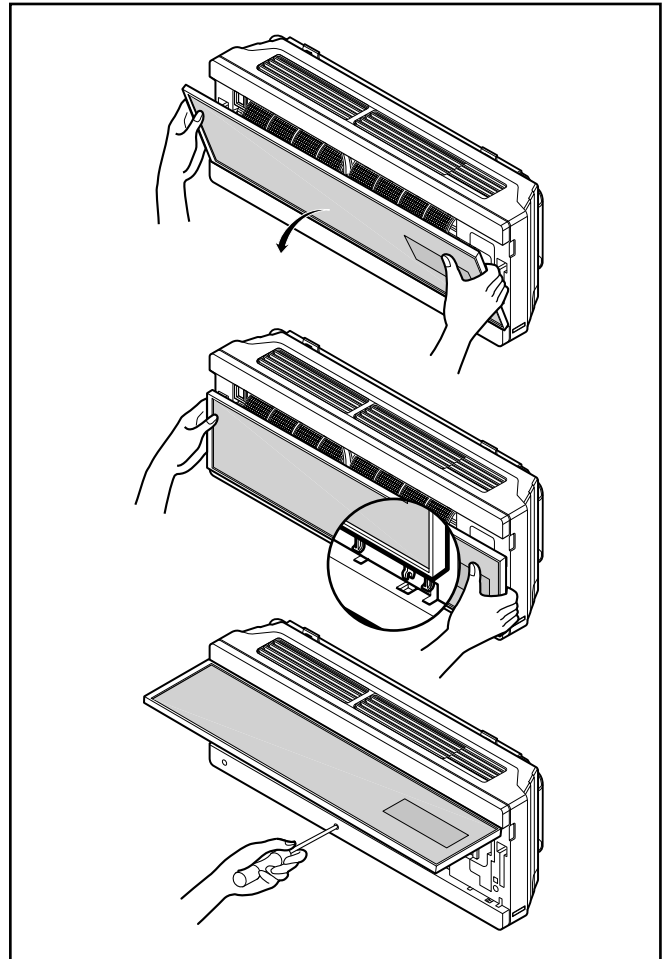
**Warning :**

Disconnect the unit from power supply before making any checks.

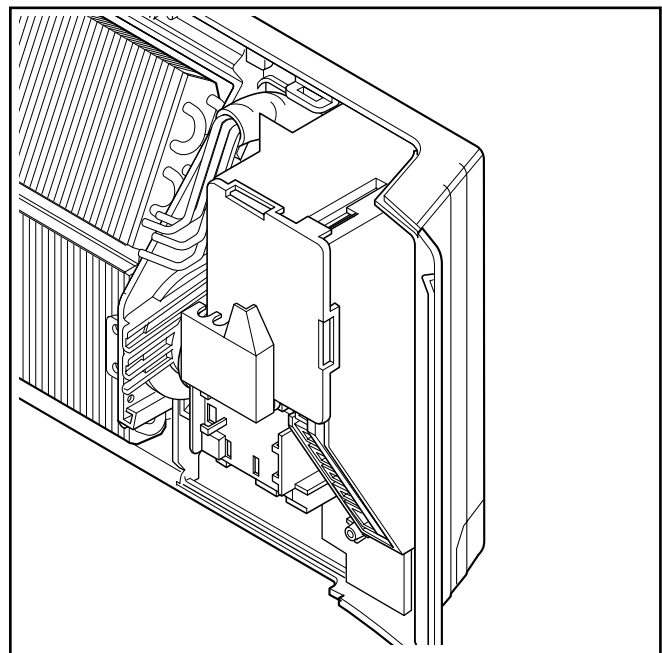
Be sure the power switch is set to "OFF".

**To remove the Grille from the Chassis.**

- Hold up Inlet Grille Horizontally.
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.
- To separate connector assembly and then to remove Inlet Grille assembly.

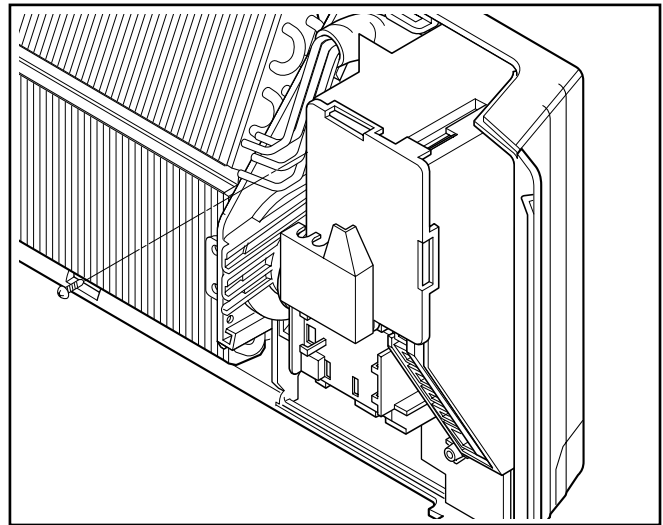


1. Before removing the control box, be sure to take out the wire screwed at the other end.



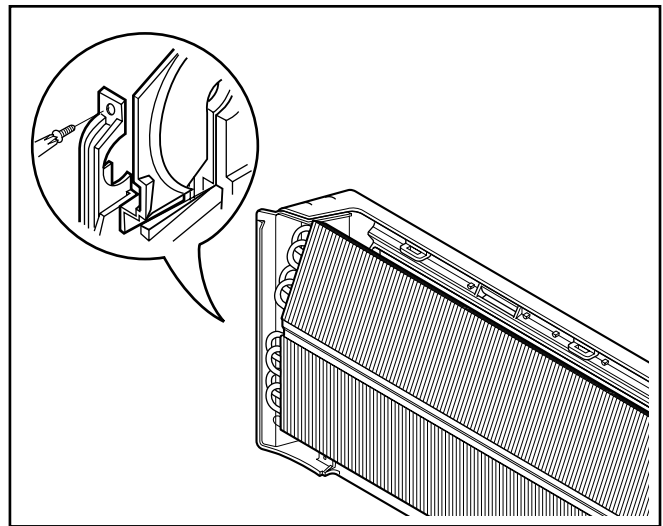
**2. To remove the Control Box.**

- Remove securing screws.
- Pull the control box out from the chassis carefully.



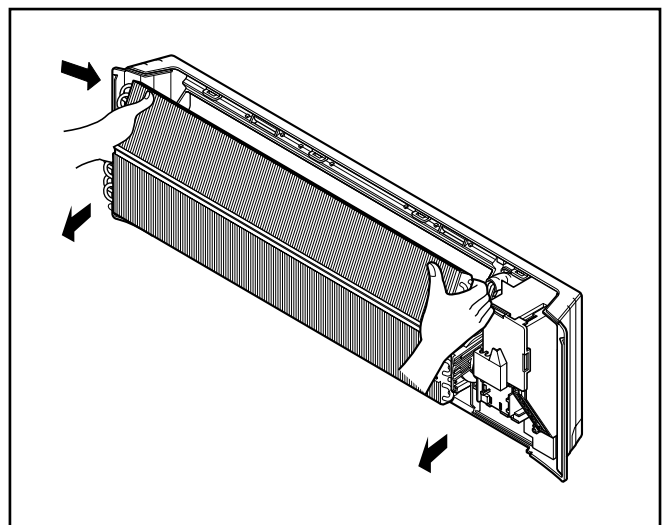
**3. To remove the Discharge Grille.**

- Unhook the discharge grille and pull the discharge grille out from the chassis carefully.

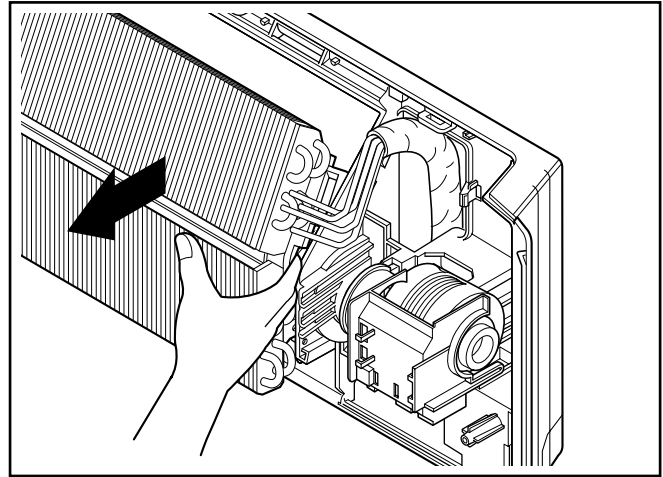


**4. To remove the Evaporator.**

- Remove 3 screws securing the evaporator(at the left 2EA in the Eva Holder, at the right 1EA).

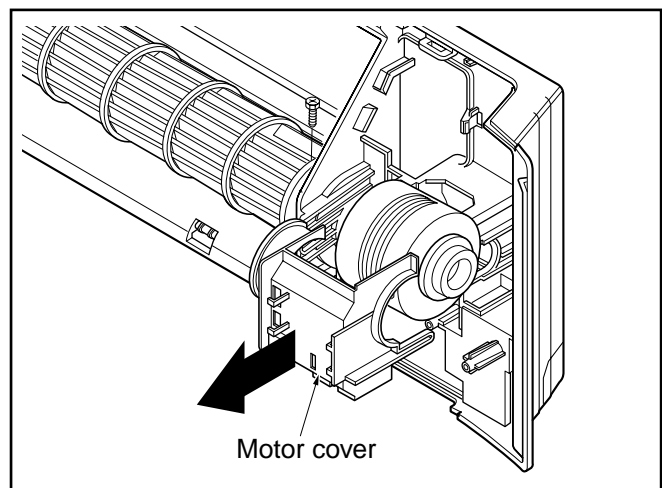


- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.



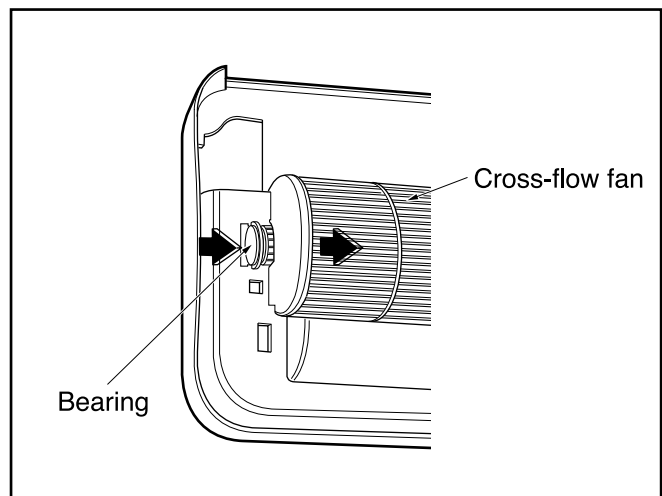
### 5. To remove the Motor Cover

- Remove 2 securing screw.
- Pull the motor cover out from the chassis carefully.



### 6. To remove the Cross-Flow Fan

- Loosen the screw securing the cross-flow fan to the fan motor (do not remove).
- Lift up the right side of the cross-flow fan and the fan motor, separate the fan motor from the cross-flow fan.

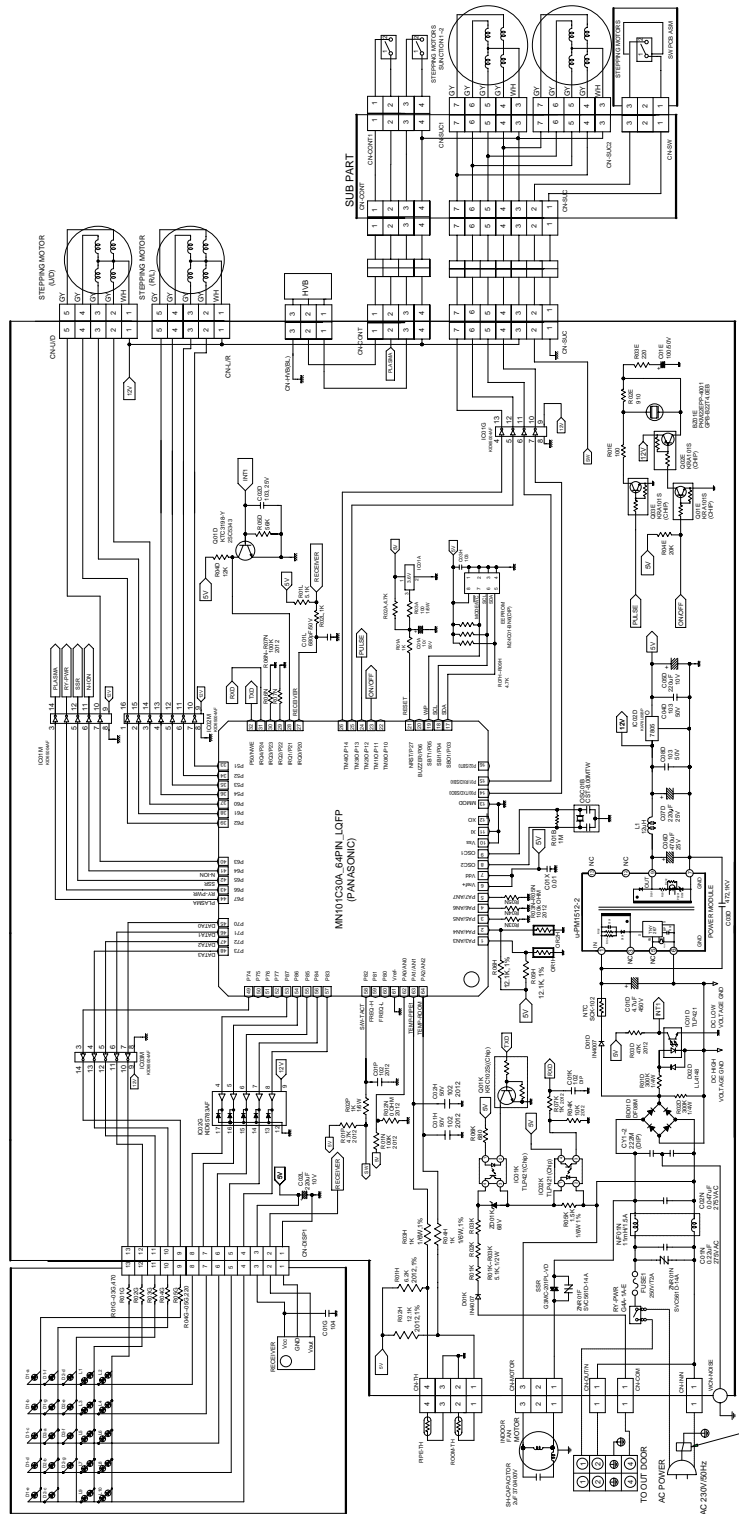


- Remove the left end of the cross-flow fan from the self-aligning bearing.

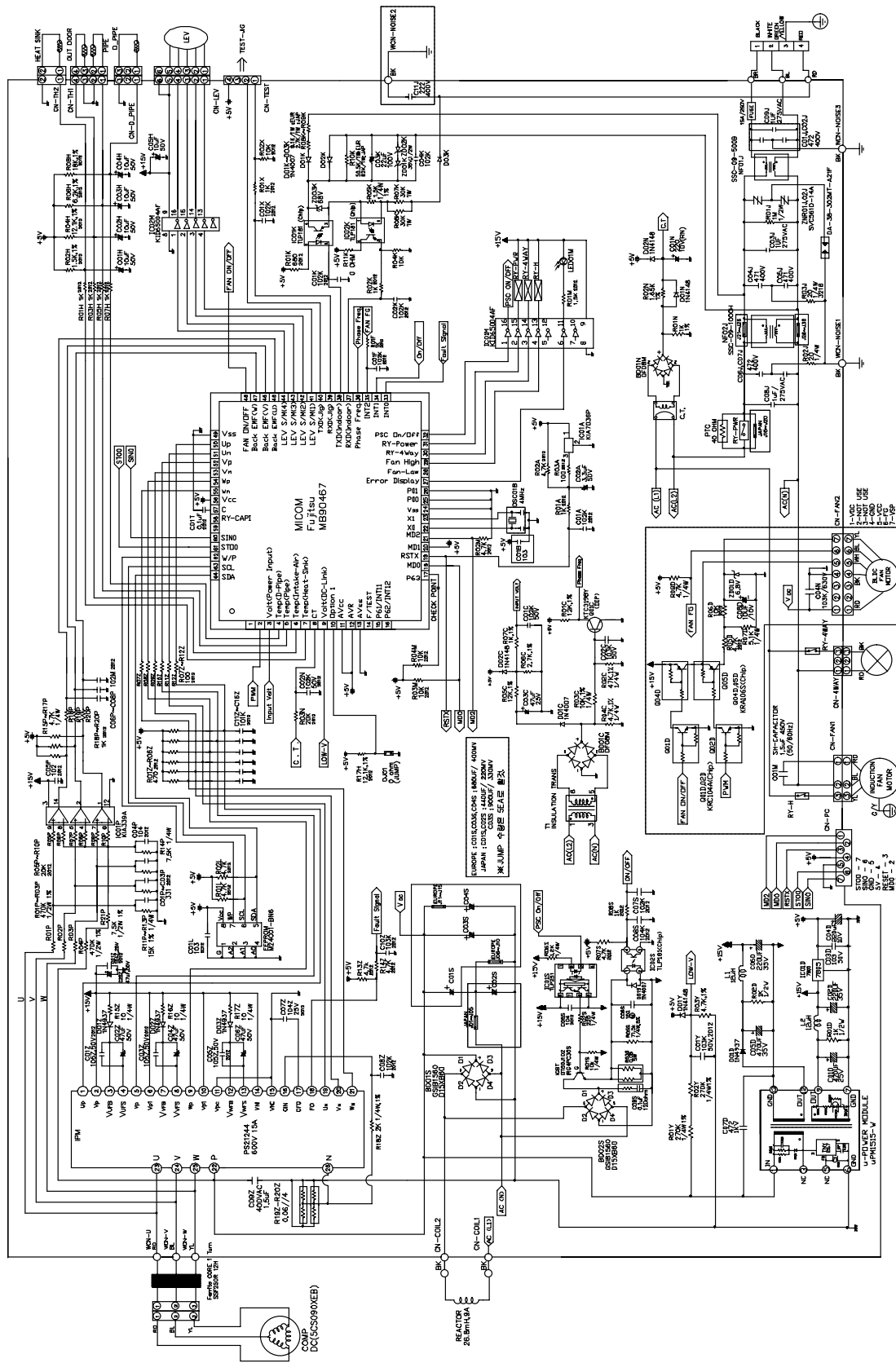
# Schematic Diagram

## Electric Control Device

- Indoor(AS-W096U\_0, AS-W126U\_0 Series)



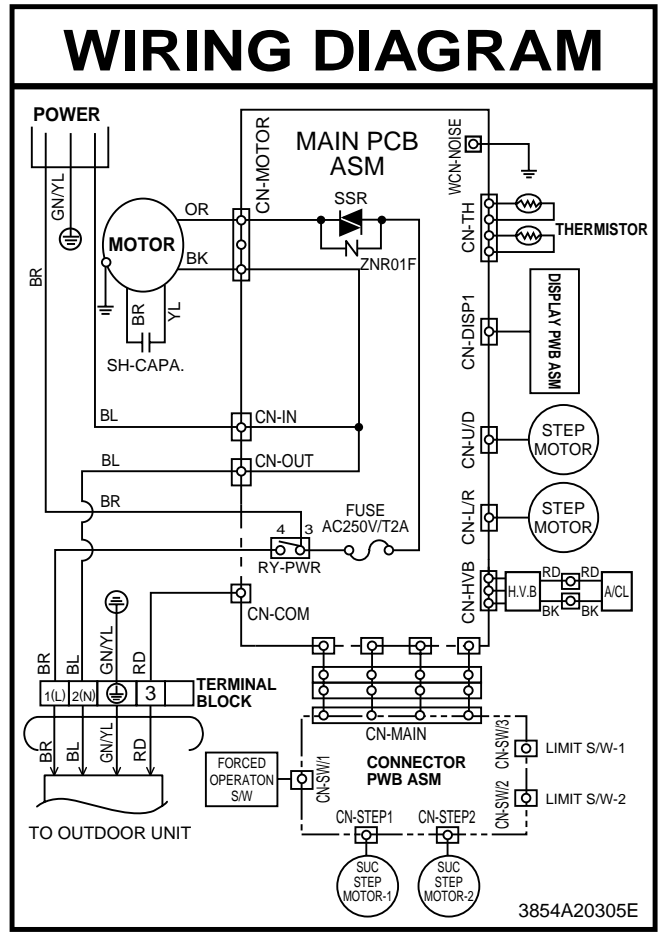
# Outdoor(AS-W096\_Series, AS-W126\_Series)



**Wiring Diagram**

**Indoor Unit**

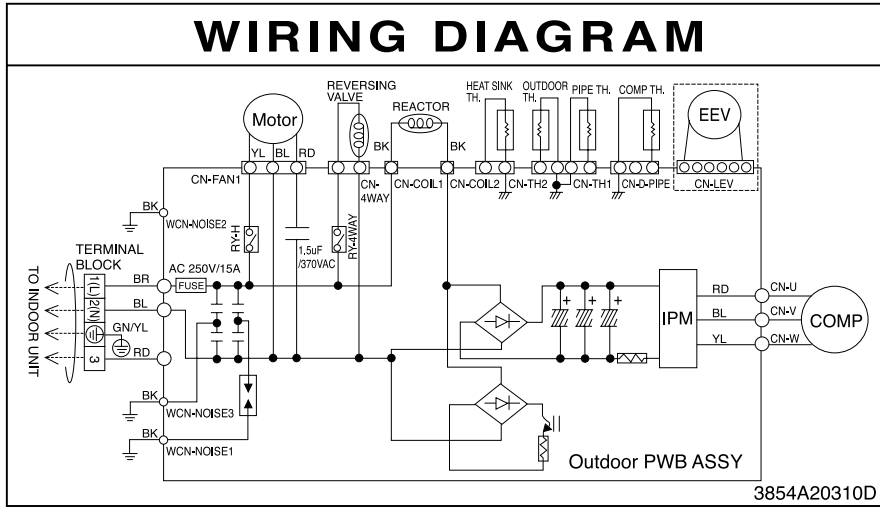
**(AS-W096/126U\_0,1 Series)**



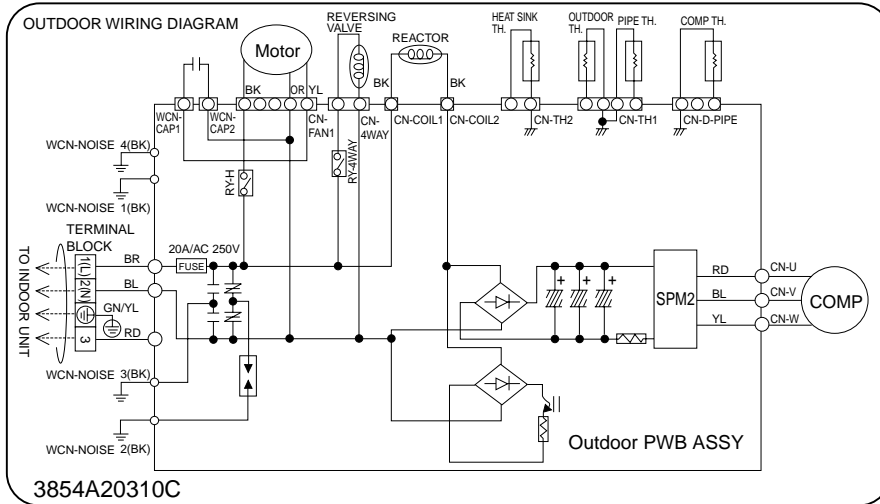


Outdoor Unit

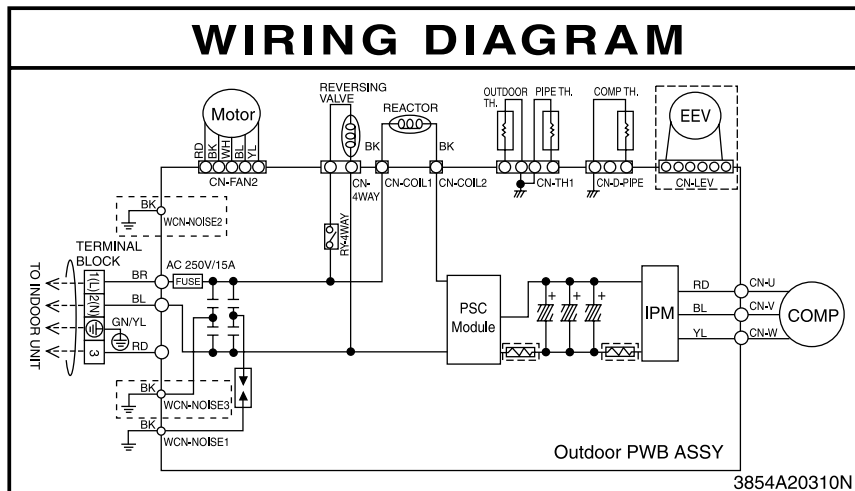
AS-W096U\_0 Series



AS-W126U\_0 Series



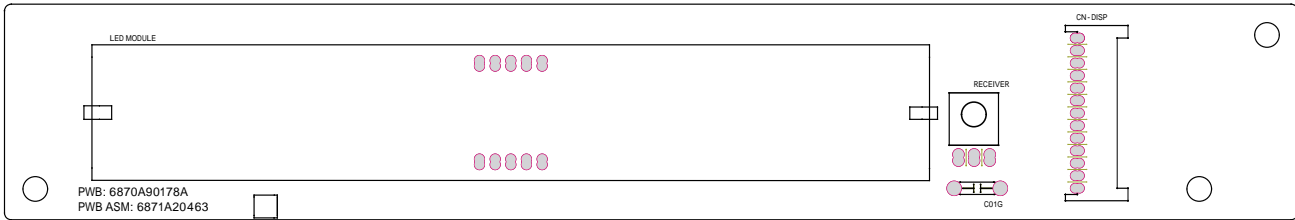
AS-W096/126U\_1 Series



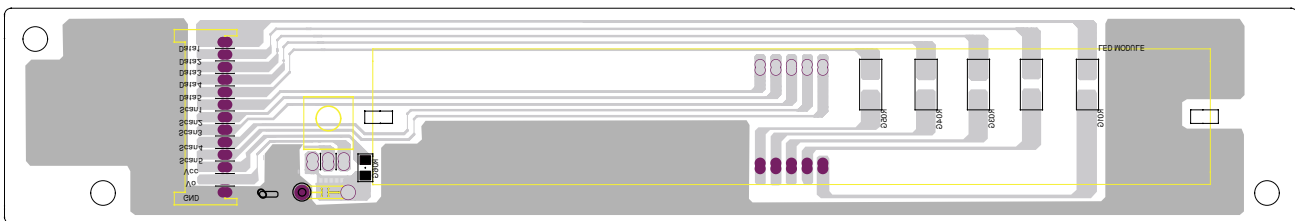


# DISPLAY ASSEMBLY(AS-W096/126U\_0,1 Series)

## TOP VIEW

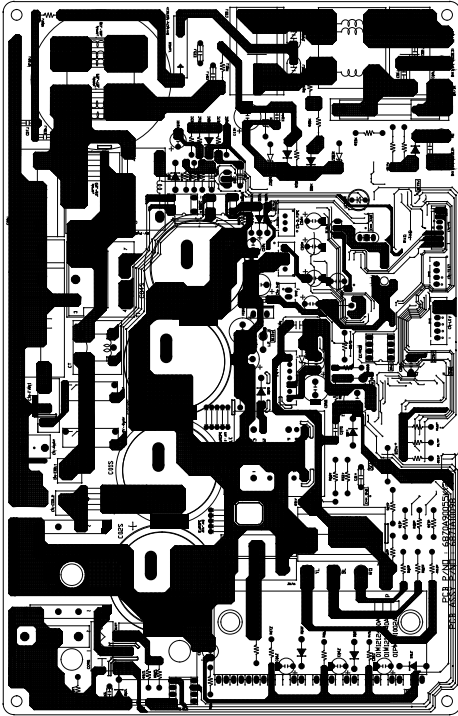


## BOTTOM VIEW

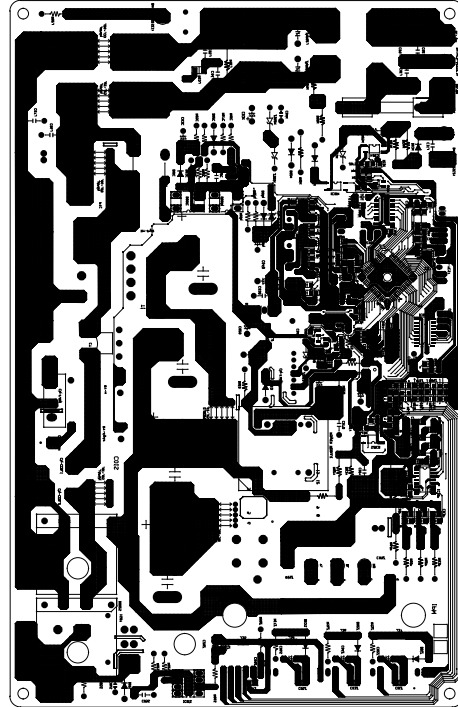


# OUTDOOR MAIN P.W.B ASSEMBLY (AS-W096/126U\_0 Series)

• TOP VIEW

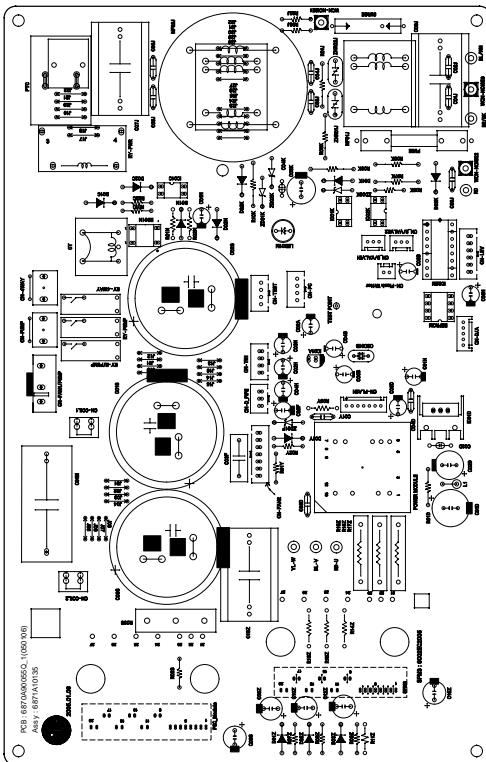


• BOTTOM VIEW

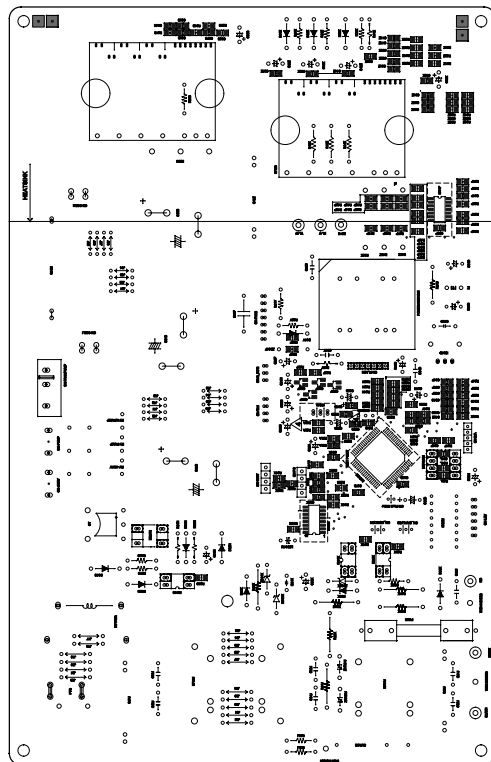


# (AS-W096/126U\_1 Series)

• TOP VIEW



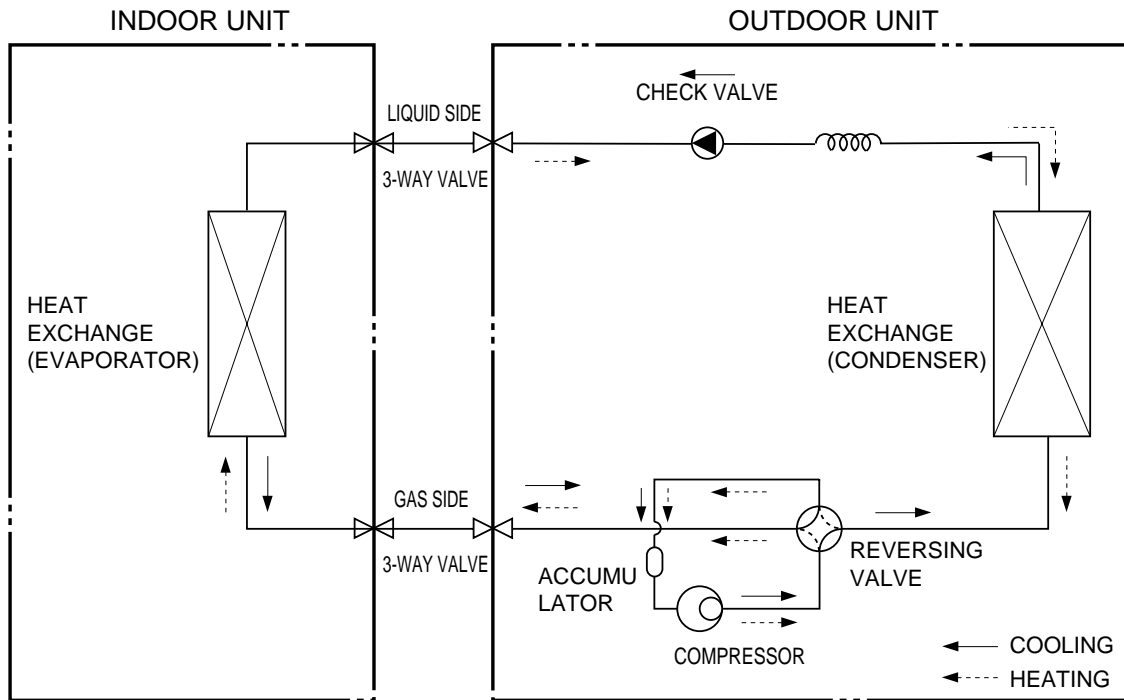
• BOTTOM VIEW



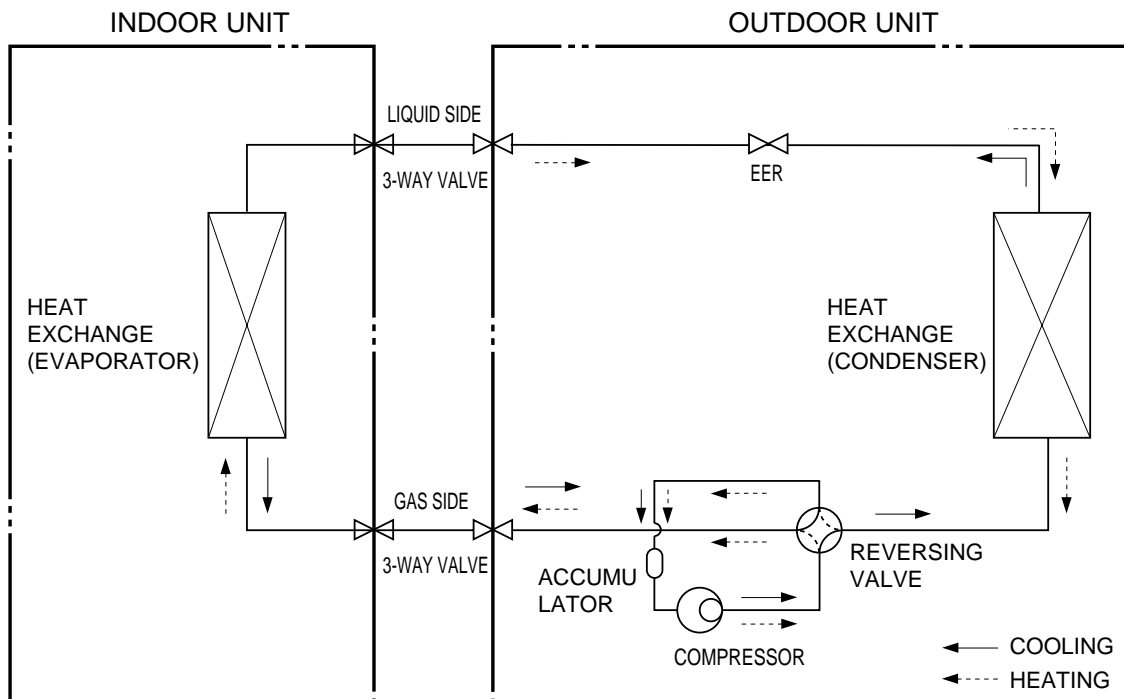
# Troubleshooting Guide

## Refrigeration Cycle Diagram

### (1) Model Capillary Tube

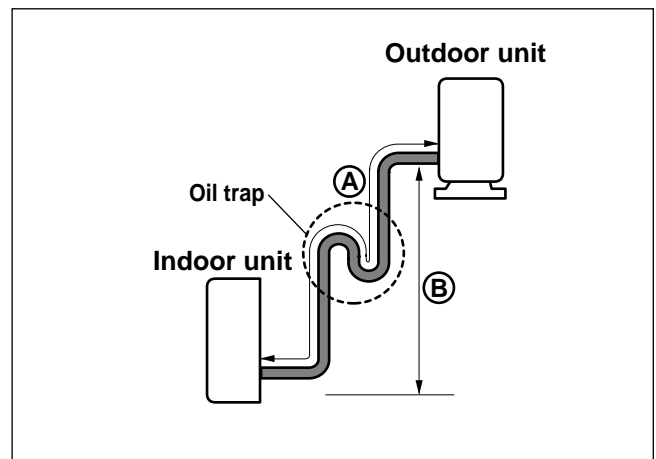
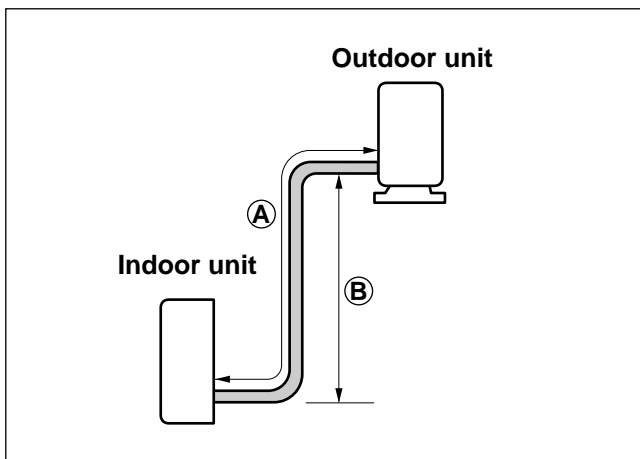


### (2) Model Adopted Electron Expansion Valve



## Pipe Length and the Elevation

Capacity (Btu/h)	Pipe Size		Standard Length (m)	Max. Elevation (B) (m)	Max. Length (A) (m)	Additional Refrigerant (g/m)
	GAS	LIQUID				
7k~14k	3/8"(Ø9.52)	1/4"(Ø6.35)	4 or 7.5	7	15	20
	1/2"(Ø12.7)	1/4"(Ø6.35)	4 or 7.5	7	15	20
18k~28k	1/2"(Ø12.7)	1/4"(Ø6.35)	4 or 7.5	15	30	20
	5/8"(Ø15.88)	1/4"(Ø6.35)	4 or 7.5	15	30	20
	5/8"(Ø15.88)	3/8"(Ø9.52)	4 or 7.5	15	30	30
30k~38k	5/8"(Ø15.88)	3/8"(Ø9.52)	7.5	15	30	30
	3/4"(Ø19.05)	3/8"(Ø9.52)	7.5	15	30	50



In case more than 5m



**CAUTION:**\* Capacity is based on standard length and maximum allowance length is the basis of reliability.

\* Oil trap should be installed per 5~7 meters.

**2-way, 3-way Valve**

		2-way Valve (Liquid Side)	3-way Valve (Gas Side)	
Works		Shaft position	Shaft position	Service port
Shipping		Closed (with valve cap)	Closed (with valve cap)	Closed (with cap)
1.	Air purging (Installation)	Open (counter-clockwise)	Closed (clockwise)	Open (push-pin or with vacuum pump)
Operation		Open (with valve cap)	Open (with valve cap)	Closed (with cap)
2.	Pumping down (Transferring)	Closed (clockwise)	Open (counter-clockwise)	Open (connected manifold gauge)
3.	Evacuation (Servicing)	Open	Open	Open (with charging cylinder)
4.	Gas charging (Servicing)	Open	Open	Open (with charging cylinder)
5.	Pressure check (Servicing)	Open	Open	Open (with charging cylinder)
6.	Gas releasing (Servicing)	Open	Open	Open (with charging cylinder)

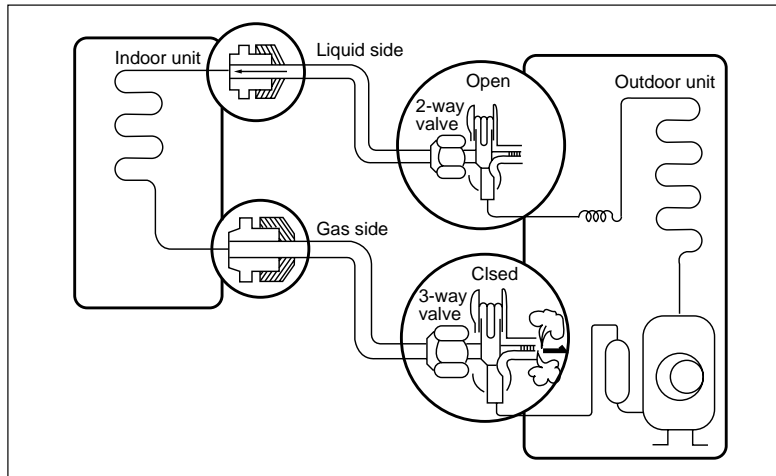
## Air purging

Required tools : hexagonal wrench, adjustable wrench, torque wrenches, wrench to hold the joints, and gas leak detector.

The additional gas for air purging has been charged in the outdoor unit.

However, if the flare connections have not be done correctly and there gas leaks, a gas cylinder and the charge set will be needed.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration pipes, it will affect the compressor, reduce to cooling capacity, and could lead to a malfunction.



Service port nut:

Be sure, using a torque wrench to tighten the service port nut (after using the service port), so that it prevents the gas leakage from the refrigeration cycle.



**CAUTION: Do not leak the gas in the air during Air purging.**

### • Procedure

- (1) Recheck the piping connections.
- (2) Open the valve stem of the 2-way valve counterclockwise approximately 90°, wait 10 seconds, and then set it to closed position.
  - Be sure to use a hexagonal wrench to operate the valve stem.
- (3) Check for gas leakage.
  - Check the flare connections for gas leakage.
- (4) Purge the air from the system.
  - Set the 2-way valve to the open position and remove the cap from the 3-way valve's service port.
  - Using the hexagonal wrench to press the valve core pin, discharge for three seconds and then wait for one minute. Repeat this three times.
- (5) Use torque wrench to tighten the service port nut to a torque of 1.8kg.cm.

- (6) Set the 3-way valve to the back seat.

- (7) Mount the valve stem nuts to the 2-way and 3-way valves.

- (8) Check for gas leakage.

- At this time, especially check for gas leakage from the 2-way and 3-way valve's stem nuts, and from the service port nut.

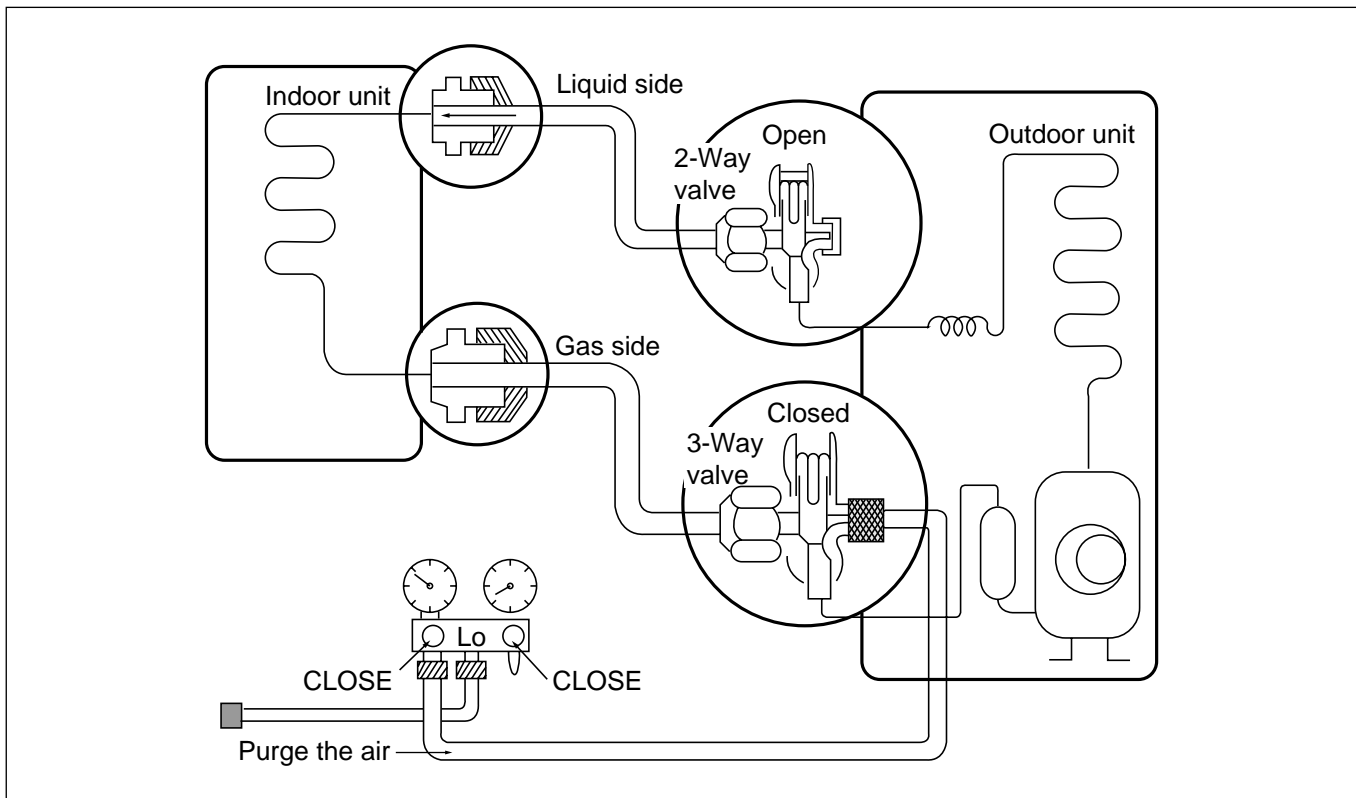


**CAUTION: If gas leakage are discovered in step (3) above, take the following mesures :**

If the gas leaks stop when the piping connections are tightened further, continue working from step (4). If the gas leaks do not stop when the connections are retightened, repair the location of the leak, discharge all of the gas through the service port, and then recharge with the specified amount of gas from a gas cylinder.



## Pumping Down

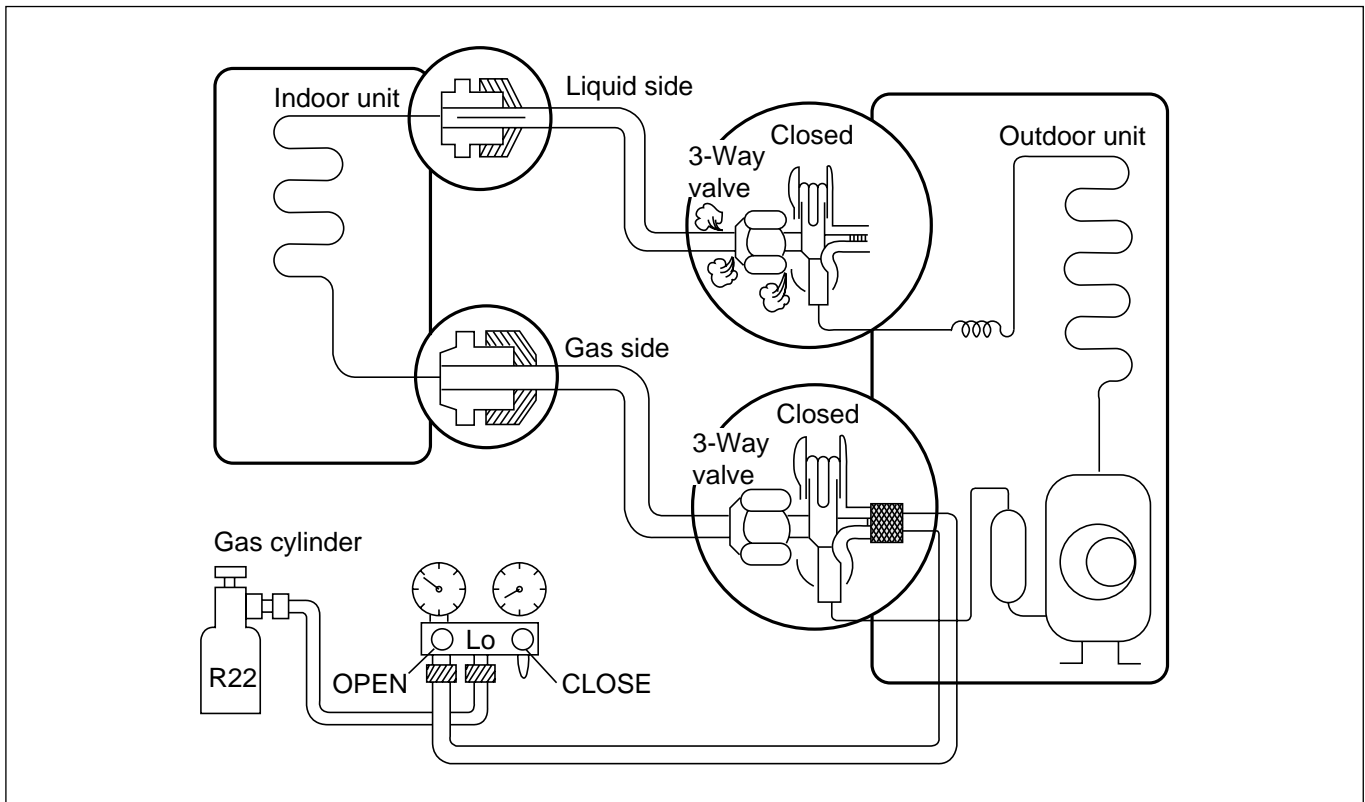


### • Procedure

- (1) Confirm that both the 2-way and 3-way valves are set to the open position.**
  - Remove the valve stem caps and confirm that the valve stems are in the raised position.
  - Be sure to use a hexagonal wrench to operate the valve stems.
- (2) Operate the unit for 10 to 15 minutes.**
- (3) Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.**
  - Connect the charge hose with the push pin to the service port.
- (4) Air purging of the charge hose.**
  - Open the low-pressure valve on the charge set slightly to air purge from the charge hose.
- (5) Set the 2-way valve to the closed position.**
- (6) Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 1kg/cm<sup>2</sup>g.**
- (7) Immediately set the 3-way valve to the closed position.**
  - Do this quickly so that the gauge ends up indicating 3 to 5kg/cm<sup>2</sup>g.
- (8) Disconnect the charge set, and mount the 2-way and 3-way valve's stem nuts and the service port nut.**
  - Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
  - Be sure to check for gas leakage.

## Re-air Purging

(Re-installation)



### • Procedure

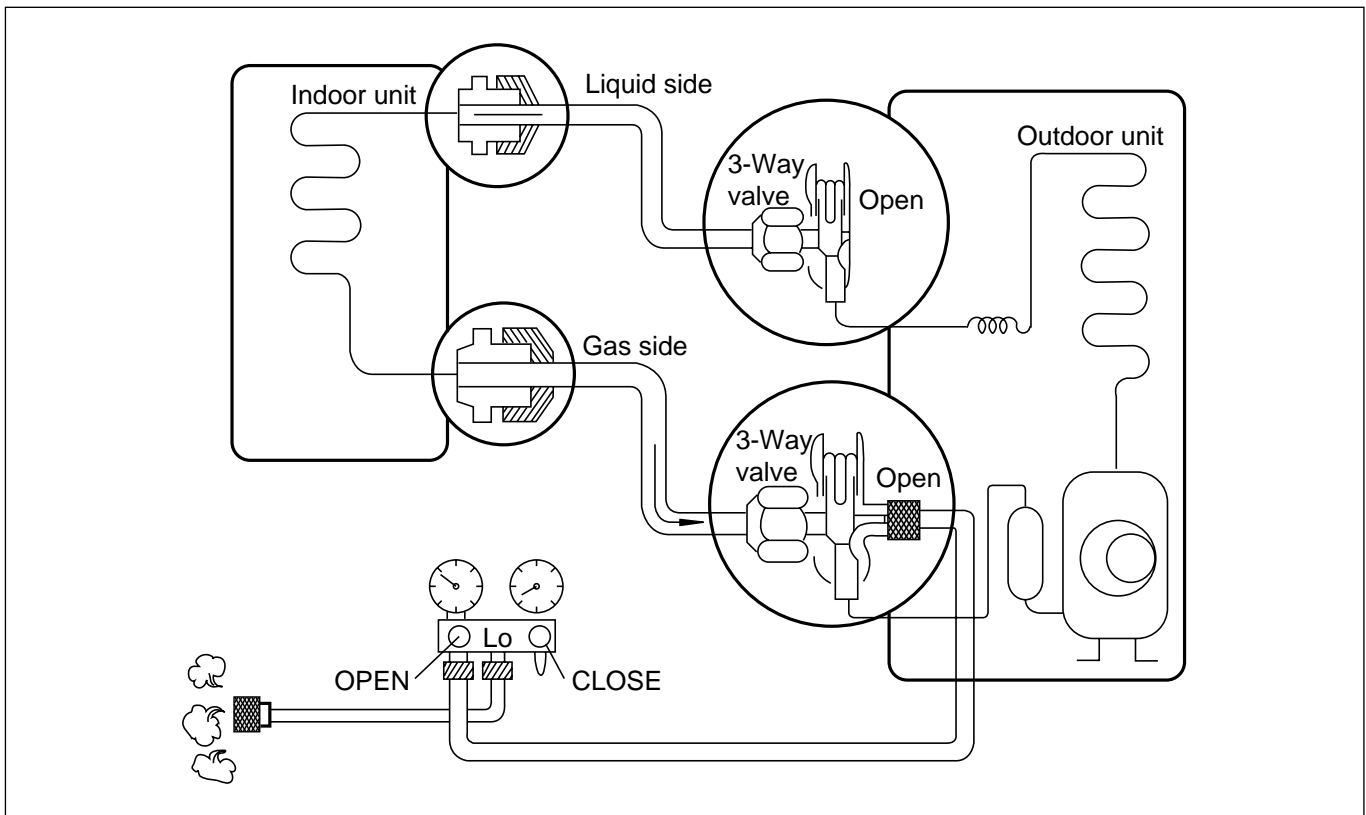
- (1) **Confirm that both the liquid side valve and the gas side valve are set to the closed position.**
- (2) **Connect the charge set and a gas cylinder to the service port of the Gas side valve.**
  - Leave the valve on the gas cylinder closed.
- (3) **Air purging.**
  - Open the valves on the gas cylinder and the charge set. Purge the air by loosening the flare nut on the liquid side valve approximately 45° for 3 seconds then closing it for 1 minute; repeat 3 times.
  - After purging the air, use a torque wrench to tighten the flare nut on liquid side valve.
- (4) **Check for gas leakage.**
  - Check the flare connections for gas leakage.
- (5) **Discharge the refrigerant.**
  - Close the valve on the gas cylinder and discharge the refrigerant until the gauge indicates 3 to 5 kg/cm<sup>2</sup>g.
- (6) **Disconnect the charge set and the gas cylinder, and set the Liquid side and Gas side valves to the open position.**
  - Be sure to use a hexagonal wrench to operate the valve stems.
- (7) **Mount the valve stem nuts and the service port nut.**
  - Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
  - Be sure to check for gas leakage.



**CAUTION: Do not leak the gas in the air during Air Purging.**

## Balance Refrigerant of the 3-way Valve

(Gas leakage)

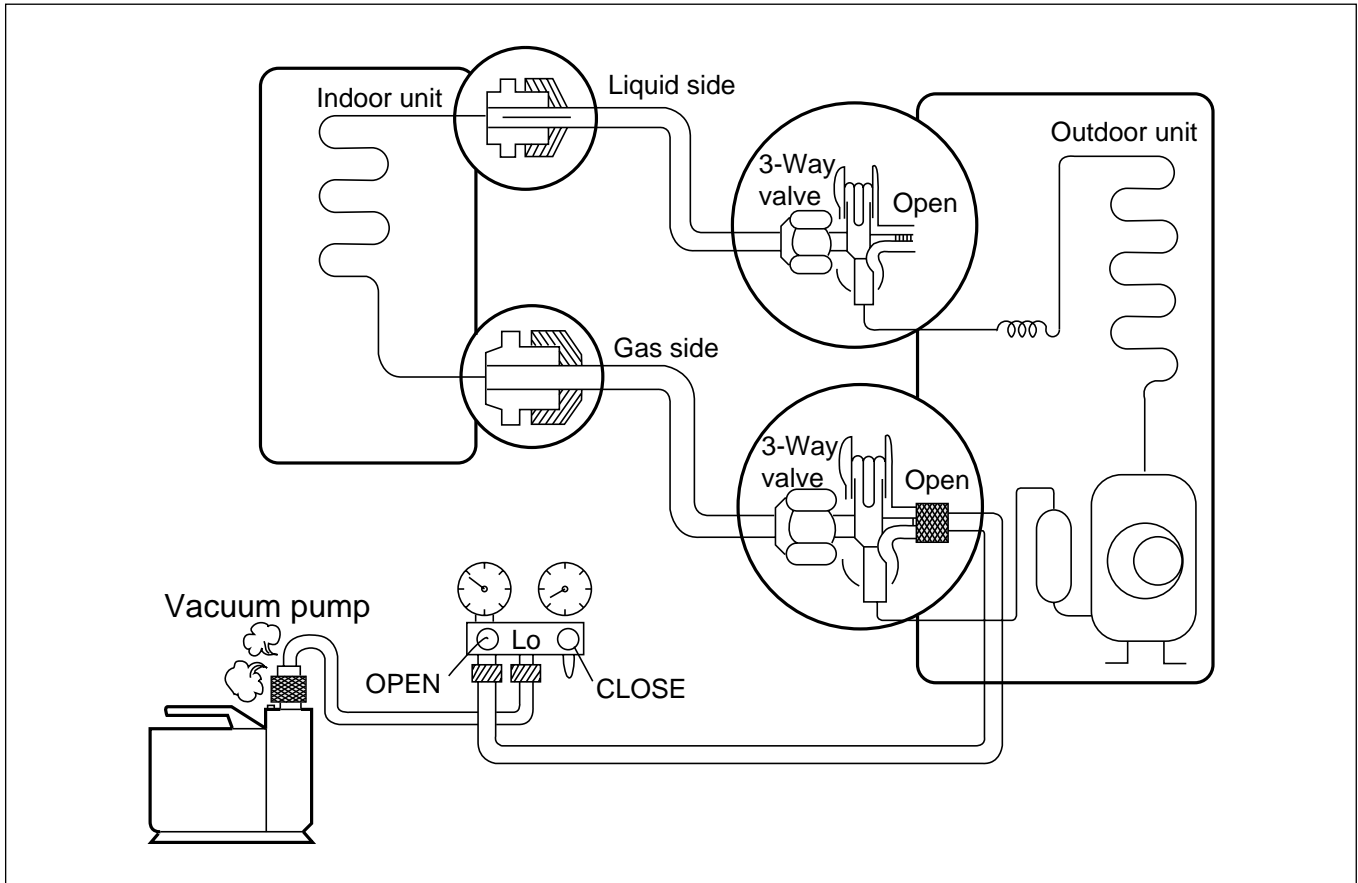


### • Procedure

- (1) Confirm that both the 2-way and 3-way valves are set to the back seat.
- (2) Connect the charge set to the 3-way valve's port.
  - Leave the valve on the charge set closed.
  - Connect the charge hose to the service port.
- (3) Open the valve (Lo side) on the charge set and discharge the refrigerant until the gauge indicates 0 kg/cm<sup>2</sup>G.
  - If there is no air in the refrigerant cycle (the pressure when the air conditioner is not running is higher than 1 kg/cm<sup>2</sup>G), discharge the refrigerant until the gauge indicates 0.5 to 1 kg/cm<sup>2</sup>G. If this is the case, it will not be necessary to apply a vacuum.
  - Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will also be discharged.

## Evacuation

(All amount of refrigerant leaked)

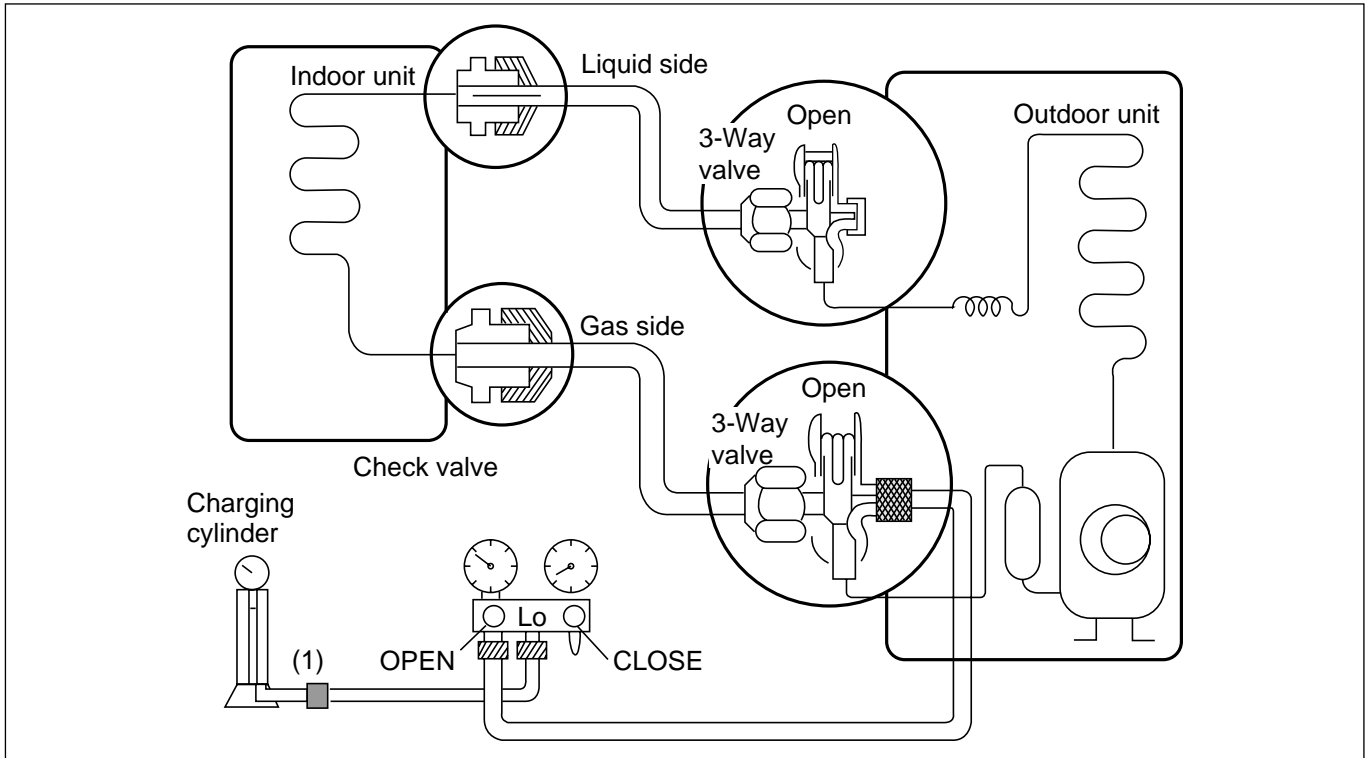


### • Procedure

- (1) Connect the vacuum pump to the center hose of charge set center hose
- (2) Evacuation for approximately one hour.
  - Confirm that the gauge needle has moved toward -76 cmHg (vacuum of 4 mmHg or less).
- (3) Close the valve (Lo side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).
- (4) Disconnect the charge hose from the vacuum pump.
  - Vacuum pump oil.  
If the vacuum pump oil becomes dirty or depleted, replenish as needed.

## Gas Charging

(After Evacuation)



### • Procedure

#### (1) Connect the charge hose to the charging cylinder.

- Connect the charge hose which you dis-connected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged with liquid.

#### (2) Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

#### (3) Open the valve (Lo side on the charge set and charge the system with liquid refrigerant.

- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure (pumping down-pin).

This is different from previous procedures. Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

#### (4) Immediately disconnect the charge hose from the 3-way valve's service port.

- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner turn off the air conditioner before disconnecting the hose.

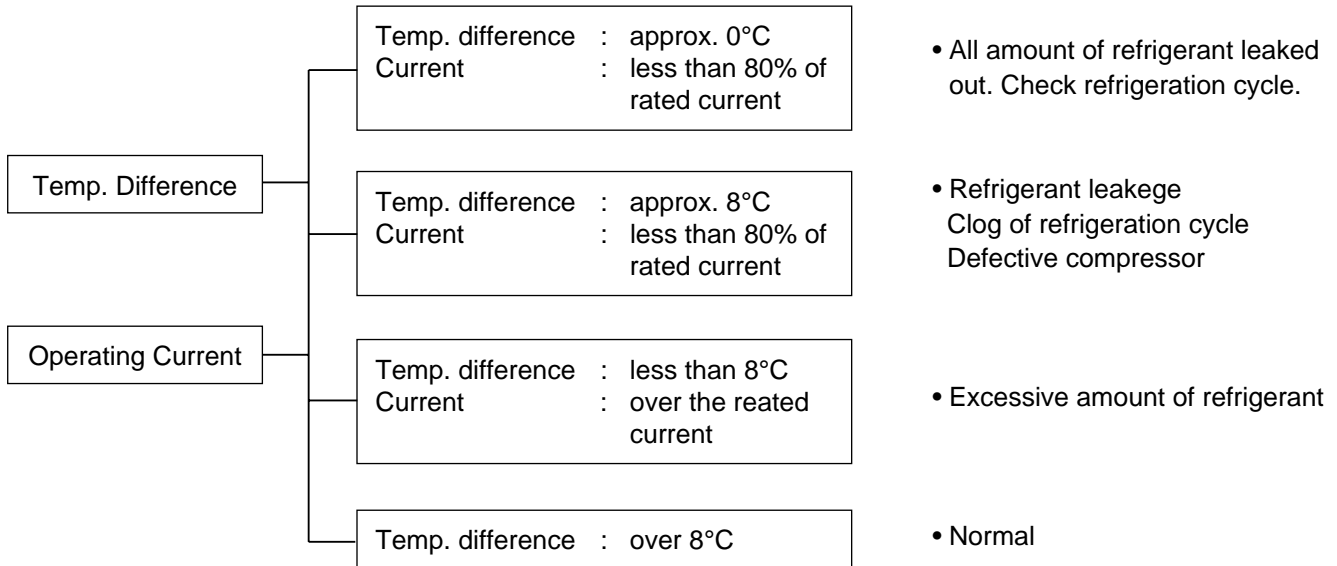
#### (5) Mount the valve stem nuts and the service port nut.

- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.

## Cycle Parts

### Trouble analysis

1. Check temperature difference between intake and discharge air and operating current.



**NOTICE**

Temperature difference between intake and discharge air depends on room air humidity. When the room air humidity is relatively higher, temperature difference is smaller. When the room air humidity is relatively lower temperature difference is larger.

2. Check temperature and pressure of refrigeration cycle.

Suction pressure (Compared with the normal value)	Temperature (Compared with the normal valve)	Cause of Trouble	Description
Higher	High	Defective compressor Defective 4-way reverse valve	Current is low.
	Normal	Excessive amount of refrigerant	High pressure does not quickly rise at the beginning of operation.
Lower	Higher	Insufficient amount of refrigerant (Leakage)	Current is low.
		Clogging	Current is low.

**NOTICE**

1. The suction pressure is usually 8.5~9.5kg/cm<sup>2</sup>G(Cooling) at normal condition.
2. The temperature can be measured by attaching the thermometer to the low pressure tubing and wrap it with putty.

## Self-diagnosis function

### 1. The malfunction indicator of indoor (see the operating LED of the INDOOR)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
①	Indoor TH. is short or open.	The operating LED will be blinking once.	Keep operating state.
②	Outdoor TH. is short or open.	The operating LED will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C. /Heat sink TH. is short or open.	The operating LED will be blinking 4 times.	Restart compressor when Heat sink Temp is 85°C below.
⑤	Communication error (serial communication).	The operating LED will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The operating LED will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is overloaded. (CT2)	The operating LED will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑧	Indoor fan lock error (BLDC fan model)	The operating LED will be blinking 8 times.	The operation is off(enable to restart by remote controller).
⑨	Outdoor fan lock error (BLDC fan model)	The operating LED will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The operating LED will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovered)

✳ Error code ⑥, ⑦ can't be operated unless the power cord is removed.

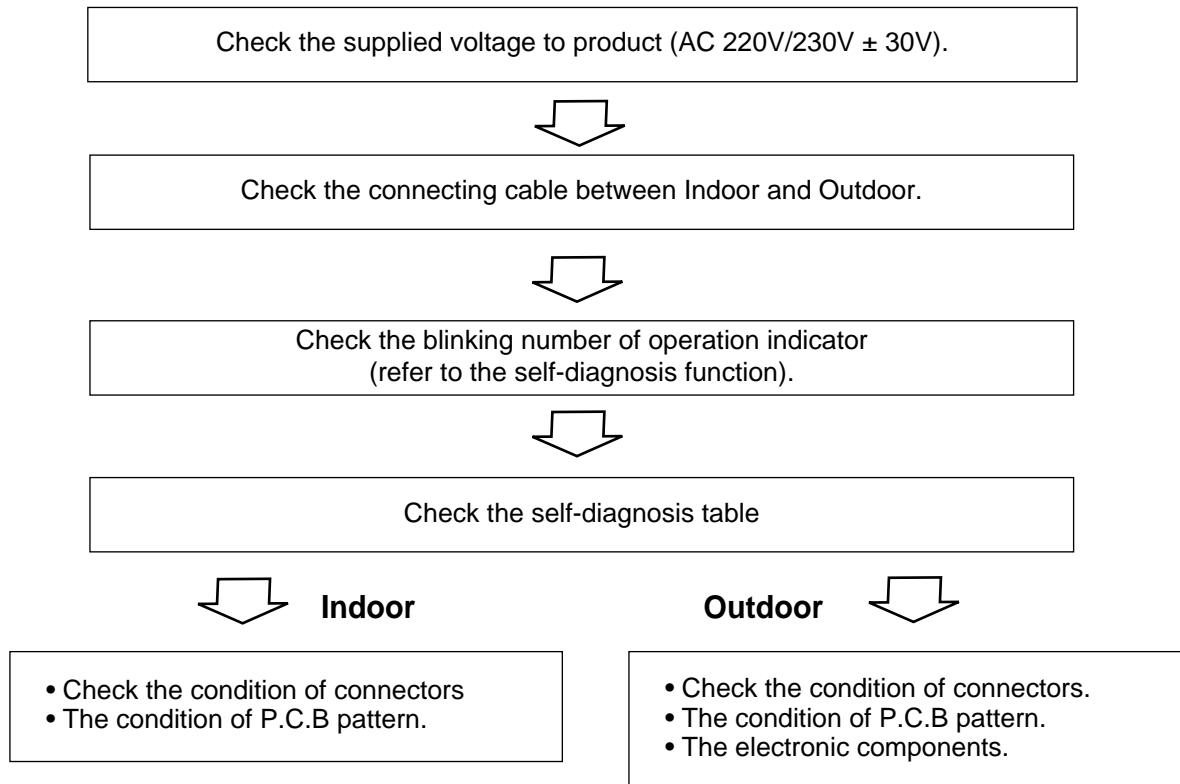
### 2. The malfunction indicator of outdoor (see the LED01M on the outdoor PCB ass'y)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
②	Indoor TH. is short or open.	The LED01M will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C, or Heat sink TH. is short or open.	The LED01M will be blinking 4 times.	Restart compressor when heat sink Temp. is 85°C below.
⑤	Communication error (serial communication).	The LED01M will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The LED01M will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is overloaded.	The LED01M will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑨	Outdoor fan lock error (BLDC fan model)	The LED01M will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The LED01M will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovered)

## ■ Precaution in Service or Check

Even after stopping the operation of product, it takes some time to discharge the remaining electricity of the electrolytic capacitor that was charged. Before starting a checking or repairing job, pull out the plug out of the outlet and make sure that the lamp on the control board outdoor unit is off.

## ■ The Diagnosis Procedure





## Electronic Parts

\* Refer to electronic control device drawing & schematic diagram.

### Trouble 1 The Product doesn't operate at all.

Turn off the main power and wait to 10 seconds



Turn on the main power again.



Does "Beeping" sound is made from the indoor unit?



Check the voltage of power(AC220V/AC240V, 50Hz).

- The voltage of main power.
- The voltage applied to the unit.
- The connecting method of Indoor/Outdoor connecting cable (each color)
- The P.C.B. Ass'y  
(Fuse, Noise Filter, Power Module, Bridge Diode, etc.)



- Primarily, the operating condition of Micom is O.K.



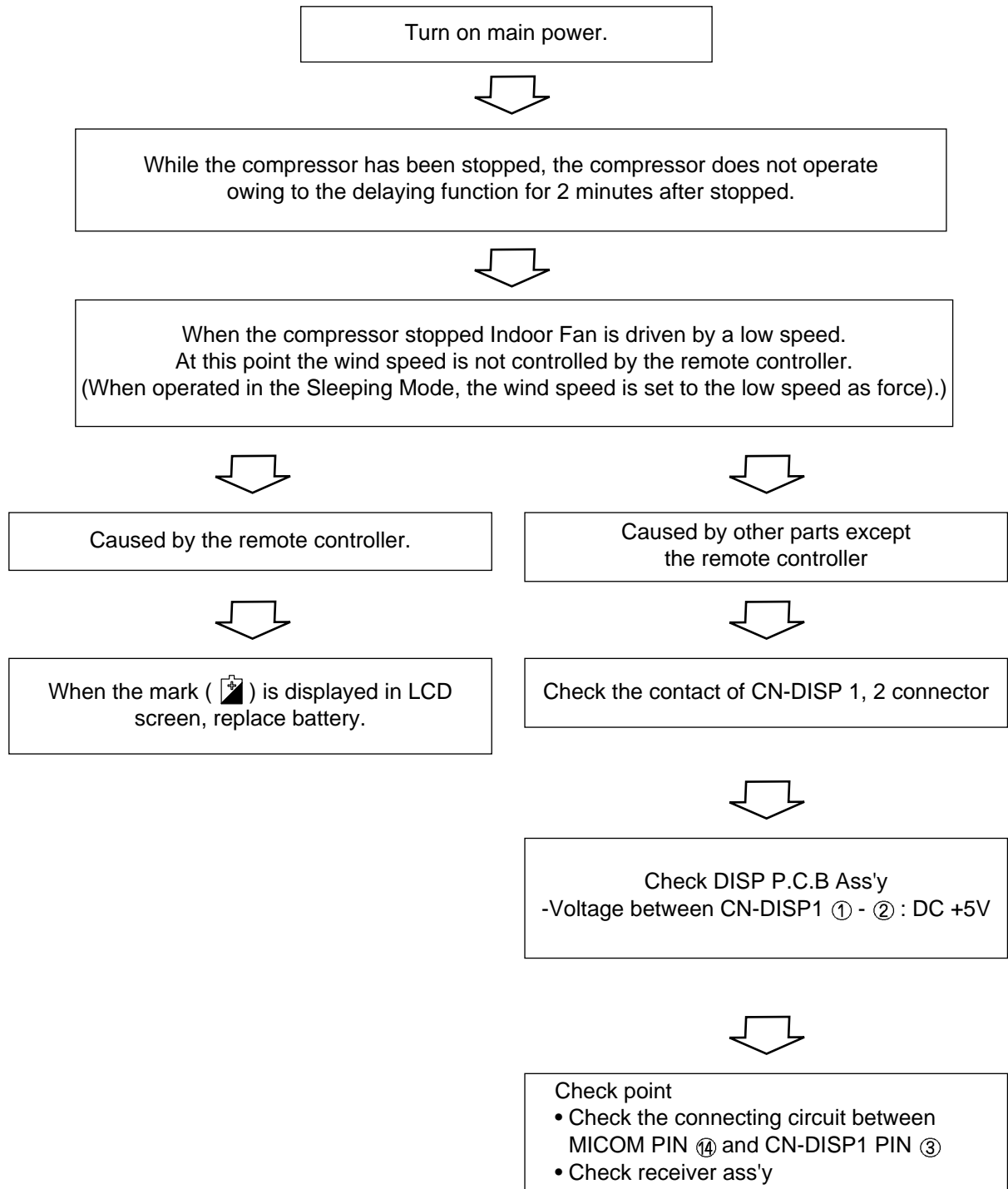
- Check CN-DISP1  
CN-DISP2 of indoor DC PCB

The operation check of the Indoor P.C.B. Ass'y

Procedure	Specification	Remedy
1) The input voltage of power module.	1) AC230V ± 30V : Check the rated voltage	1) Check the power outlet.
2) The output voltage of power module.	2) 12V ± 3V	2) Replace P.C.B Ass'y
4) IC02D(7805)	4) DC5V	4) Replace P.C.B Ass'y
5) IC01A(KIA7036)	5) The voltage of micom pin 19 : DC4.5V↑	5) Replace P.C.B Ass'y

**Trouble 2**

**Product doesn't operate with the remote controller.**



**Trouble 3**

**The Compressor/Outdoor Fan are unable to drive.**

Turn on the main power.



Operate Cooling Mode by setting the disired temperature of the remote controller is less than one of the Indoor temperature by 1°C at least.



When in air circulation mode, compressor/outdoor fan is stopped.



Check the sensor for Indoor temperature is attached as close as to be effected by the temperature of Heat Exchange (EVA.)



When the sensor circuit for Indoor temperature and connector are in bad connection or are not engaged, Compressor/Outdoor fan is stopped.

- Check the related circuit of R02H(12.1K), R01H(6.2K), R04H(1K), R03H(1K), C01H(102), C02H(102), Micom(pin No. ④, ⑤).
- Check the Indoor temperature sensor is disconnected or not (Resistance is about 10K at 25°C).



Check the Relay(RY-PWR) for driving Compressor.

- Check the voltage between brown and blue cable of terminal to connect the Outdoor (About AC220V / 240V).
- Check the related circuit of relay in Outdoor PCB Ass'y.

Check Point	Comp. ON	Comp. OFF
Between Micom(No. ④) and GND	DC 5V	DC 0V
Between IC01M(No. ⑤) and GND	DC 1V↓	DC 12V



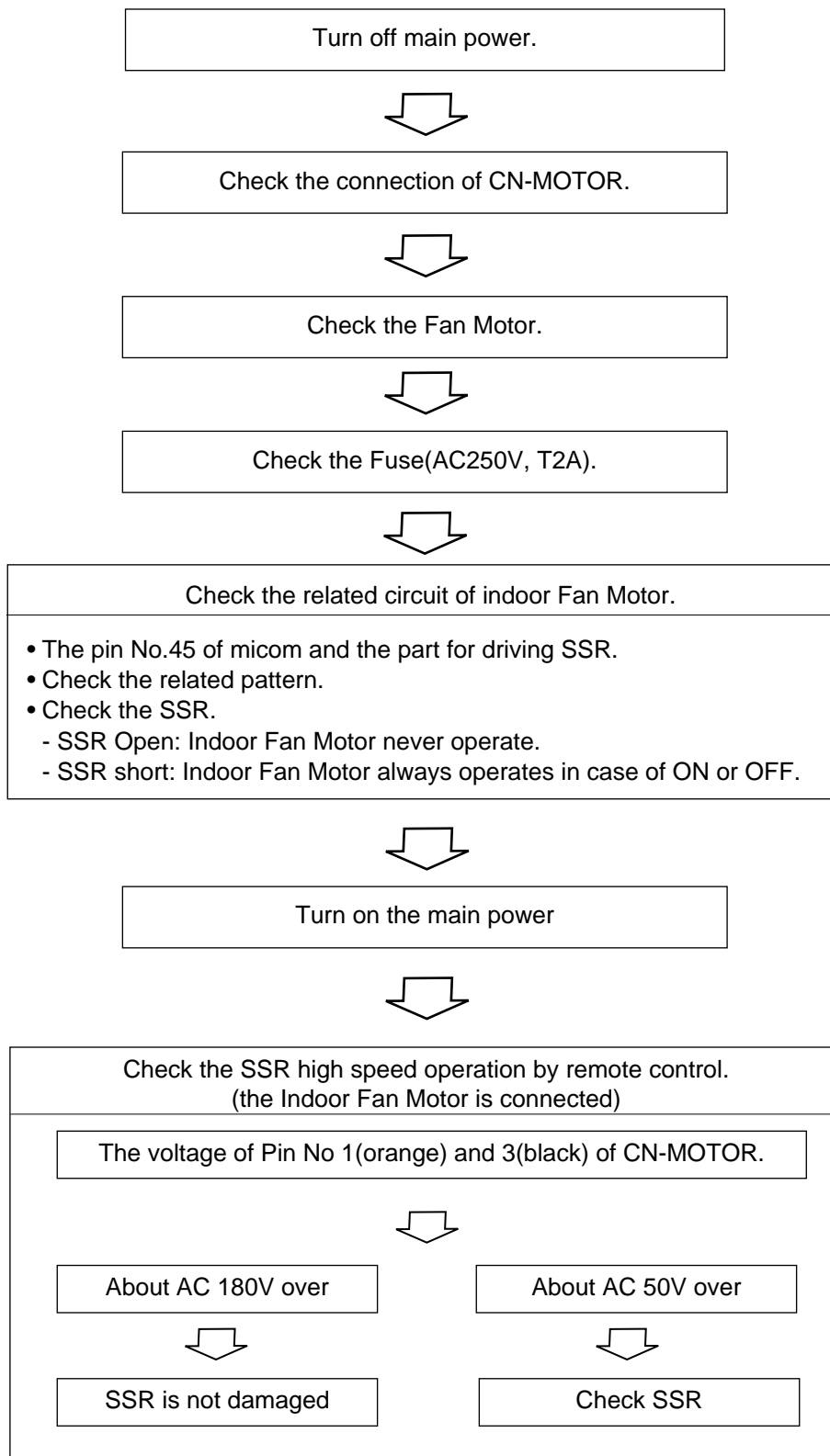
Turn off main power.



Check the electrical wiring diagram of Outdoor side.  
Check the open or short of connecting wires between Indoor and Outdoor.

**Trouble 4**

**When indoor Fan does not operate.**



**Trouble 5**

**When the horizontal louver does not operate.**

- Confirm that the vertical louver is normally geared with the shaft of Stepping Motor.
- If the regular torque is detected when rotating the vertical louver with hands ⇒ Normal



- Check the connecting condition of CN-U/D Connector
- Check the soldering condition(on PCB) of CN-U/D Connector



Check the operating circuit of the vertical louver

- Confirm that there is DC +12V between pin ① of CN-U/D and GND.
- Confirm that there is a soldering short at following terminals.
  - Between ④①, ④②, ④③ and ④④ of MICOM
  - Between ④, ⑤, ⑥ and ⑦ of IC01M
  - Between ⑩, ⑪, ⑫ and ⑬ of IC01M



If there are no problems after above checks.

- Confirm the assembly condition that are catching and interfering parts in the link of the vertical louver

**Trouble 6**

**The heater does not operate at all.**

Turn off main power



Check the wire connection of PTC Heater (Refer to Wiring Diagram)



- Check the connecting condition of CN-PTC connector on the indoor DC P.C.B Ass'y.
- Check the soldering condition of CN-PTC connector on the indoor DC P.C.B Ass'y.



Check the Heater driving Circuit.

- Check the pattern between MICOM Pin No. ④⑧ → IC02M Pin No. ⑦ → IC02M Pin No. ⑩ → CN-PTC

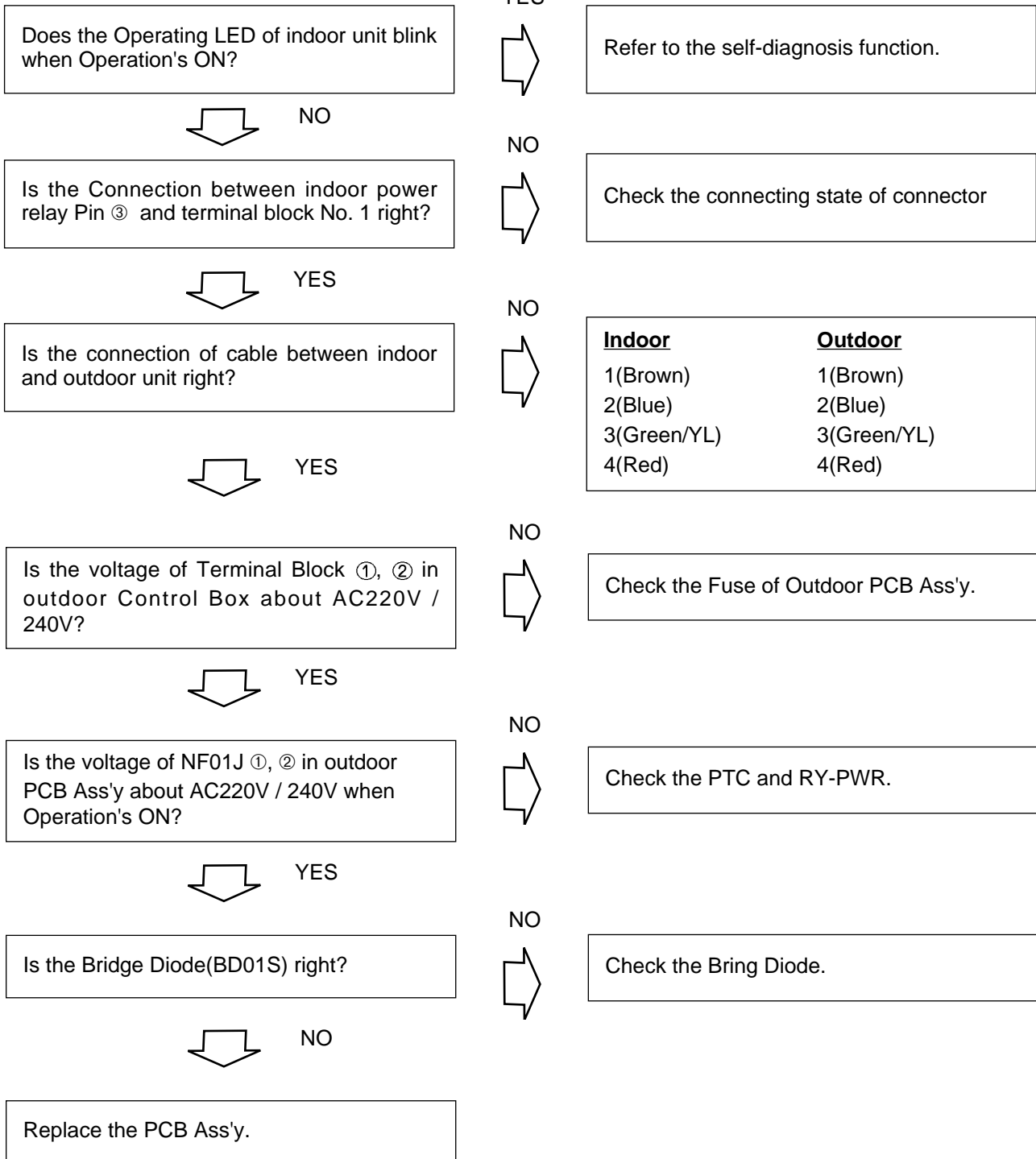


If there is no problem result of all above check.

- Inner side disconnection of PTC Heater unit or restricted operating condition of PTC Heater (pipe temp. is over 45°C, defrosting operation, compressor off, indoor fan off).

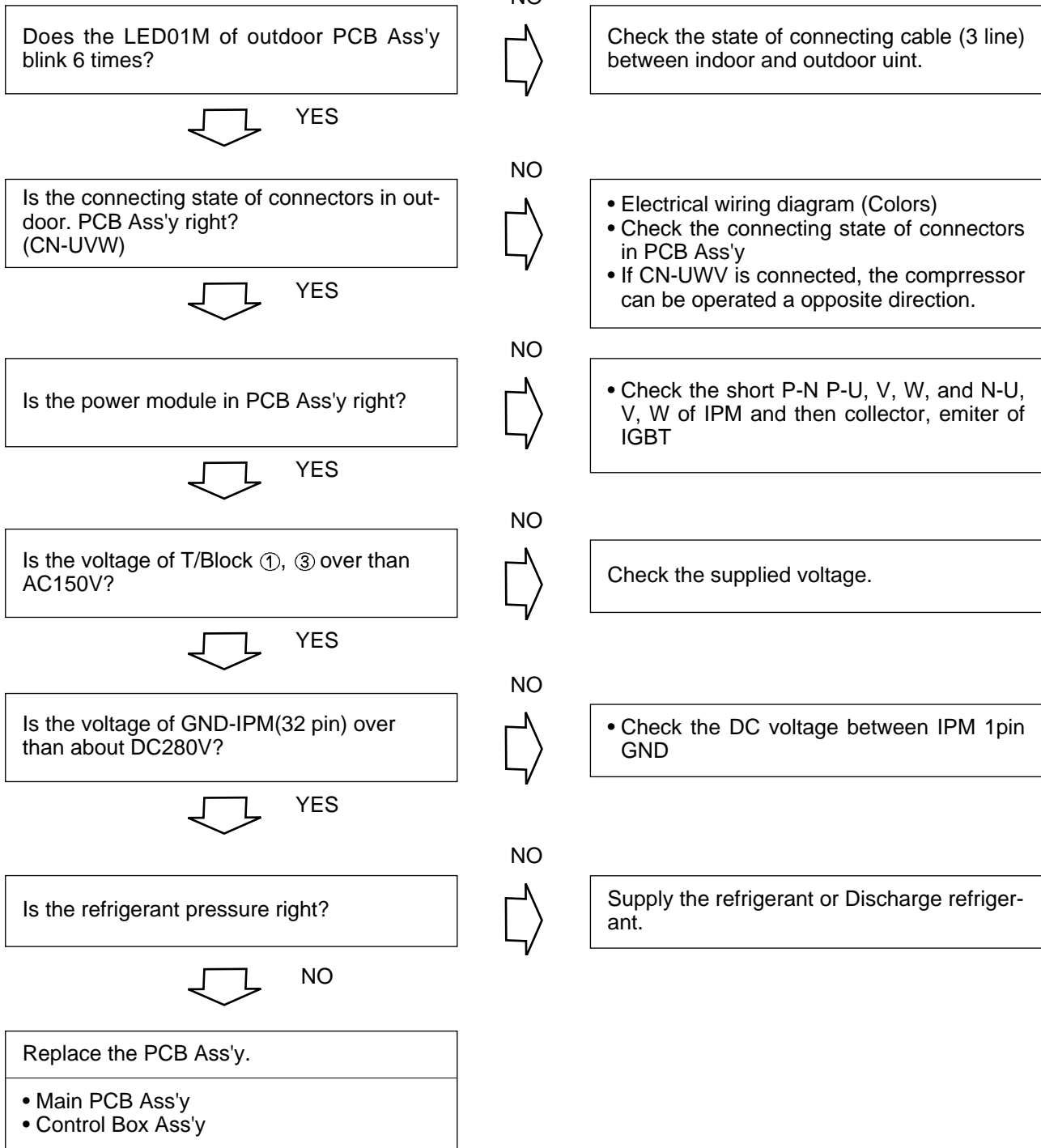
**Trouble 7**

**The Outdoor Unit does not operate at all.**



**Trouble 8-1** When compressor does not operate normally.

■ DC Peak Error(Error Code ⑥)





**Trouble 8-2** When compressor does not operate normally.

■ Communication error between Indoor and Outdoor (Error Code ⑤)

Does the operating LED in display PCB Ass'y blink 5 times?

↓ YES

Is the voltage of BR/BK, RD AC220/240V in Main PCB Ass'y.

↓ YES

Is the connection of CN-T/Block and in CN-AC/DC indoor P.C.B Ass'y is right?

↓ YES

Replace the PCB Ass'y.

- Main PCB Ass'y (Indoor/Outdoor)
- Control Box Ass'y.

NO



- Check the state of connecting cable (3 line) between indoor and outdoor unit .
- Check Fuse, Noise Filter, PTC, etc.

NO



- Electrical wiring diagram(Colors)
- Check the connecting state of connectors in outdoor PCB Ass'y
- Check the Fuse of outdoor PCB Ass'y.

NO



- Reconnect the connectors.
- Check the PCB pattern(Resoldering).

**Trouble 8-3** When compressor does not operate normally.

■ CT Error (Error Code ⑦)

Does the operating LED in Display PCB Ass'y blink 7 times?

↓ YES

Is the current transformer(CT) in Main PCB Ass'y right?

↓ YES

Is the indoor/outdoor fan locked?

↓ YES

Is the discharge temperature of Indoor unit right(11°C~17°C) in the cooling mode?

↓ YES

Is the refrigerant pressure right?

↓ YES

Replace the PCB Ass'y.

- Main PCB Ass'y(Outdoor)
- Control Box Ass'y(Outdoor)

NO



- Check the state of connecting cable (3 line) between Indoor and Outdoor Unit .
- Check fuse, Noise Filter, PTC, etc.

NO



Check the PCB pattern(resoldering)

NO



Check the indoor/outdoor fan motor.

NO



Check the compressor.

NO



Supply the refrigerant or Discharge the refrigerant.

■ The problem of missing the connector (INDOOR MAIN PCB ASSY)

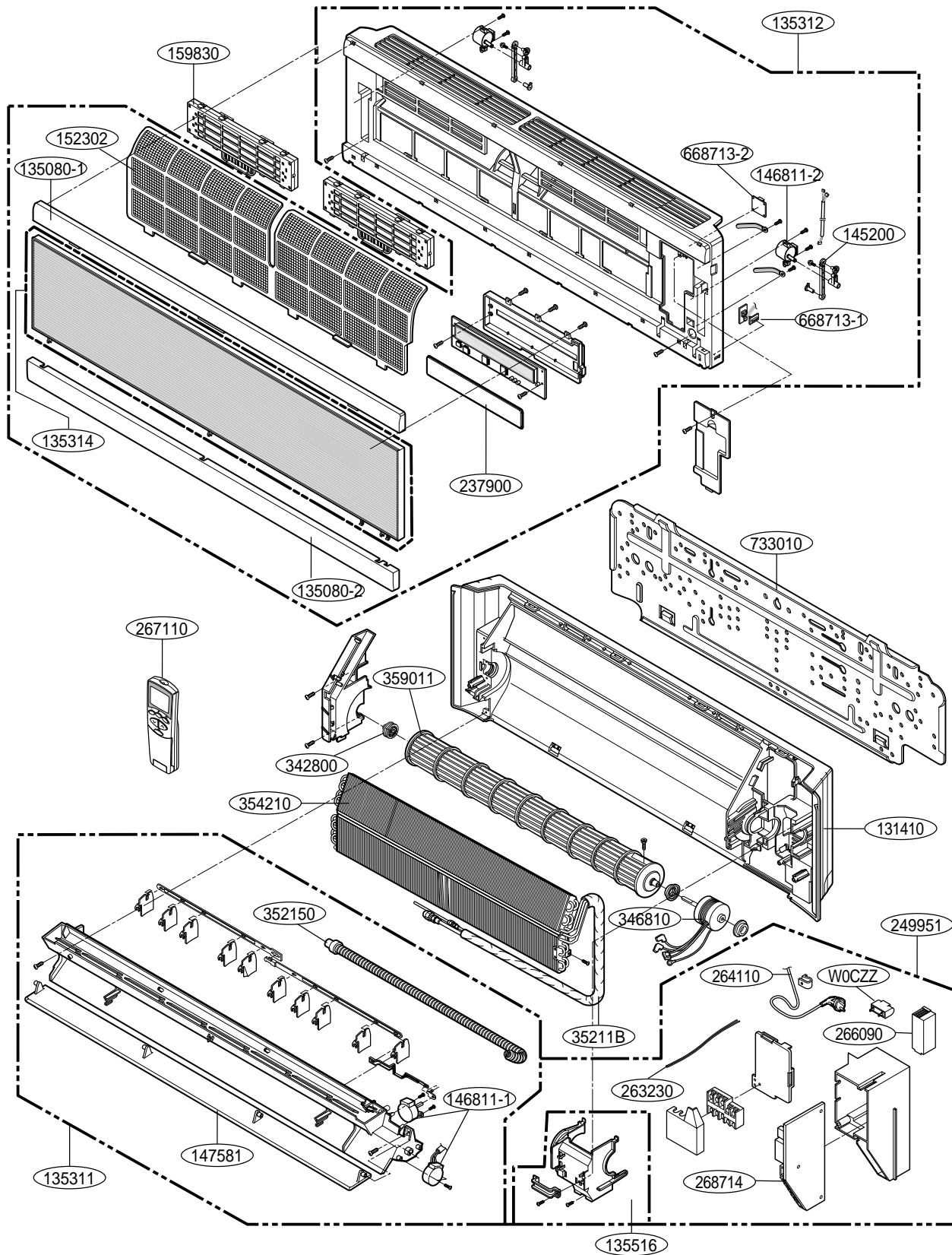
Connectors	Condition	Problem (error mode)
CN-AC/DC	OPEN	<ul style="list-style-type: none"> <li>Malfunctions all indoor &amp; outdoor unit.</li> <li>Malfunctions remocon, force, test operation mode.</li> </ul>
CN-FAN	OPEN	<ul style="list-style-type: none"> <li>Malfunctions indoor fan motor.</li> </ul>
CN-T/Block	OPEN	<ul style="list-style-type: none"> <li>Malfunctions outdoor unit.</li> <li>Stop compressor and outdoor fan motor.</li> <li>The operation LED blinks 5 times.</li> <li>Communication error.</li> </ul>
CN-DISP1	OPEN	<ul style="list-style-type: none"> <li>Malfunctions remote controller.</li> <li>Don't operate the power display module.</li> </ul>
CN-DISP2	OPEN	<ul style="list-style-type: none"> <li>Don't operate the power display module.</li> </ul>
CN-TH	OPEN/SHORT	<ul style="list-style-type: none"> <li>The operation LED blinks twice.</li> <li>Enable to receive remote signal.</li> </ul>
CN-U/D	OPEN	<ul style="list-style-type: none"> <li>Malfunctions UP/DOWN step motor.</li> <li>Don't operate louver.</li> </ul>

■ The problem of missing the connector (OUTDOOR MAIN PCB ASSY)

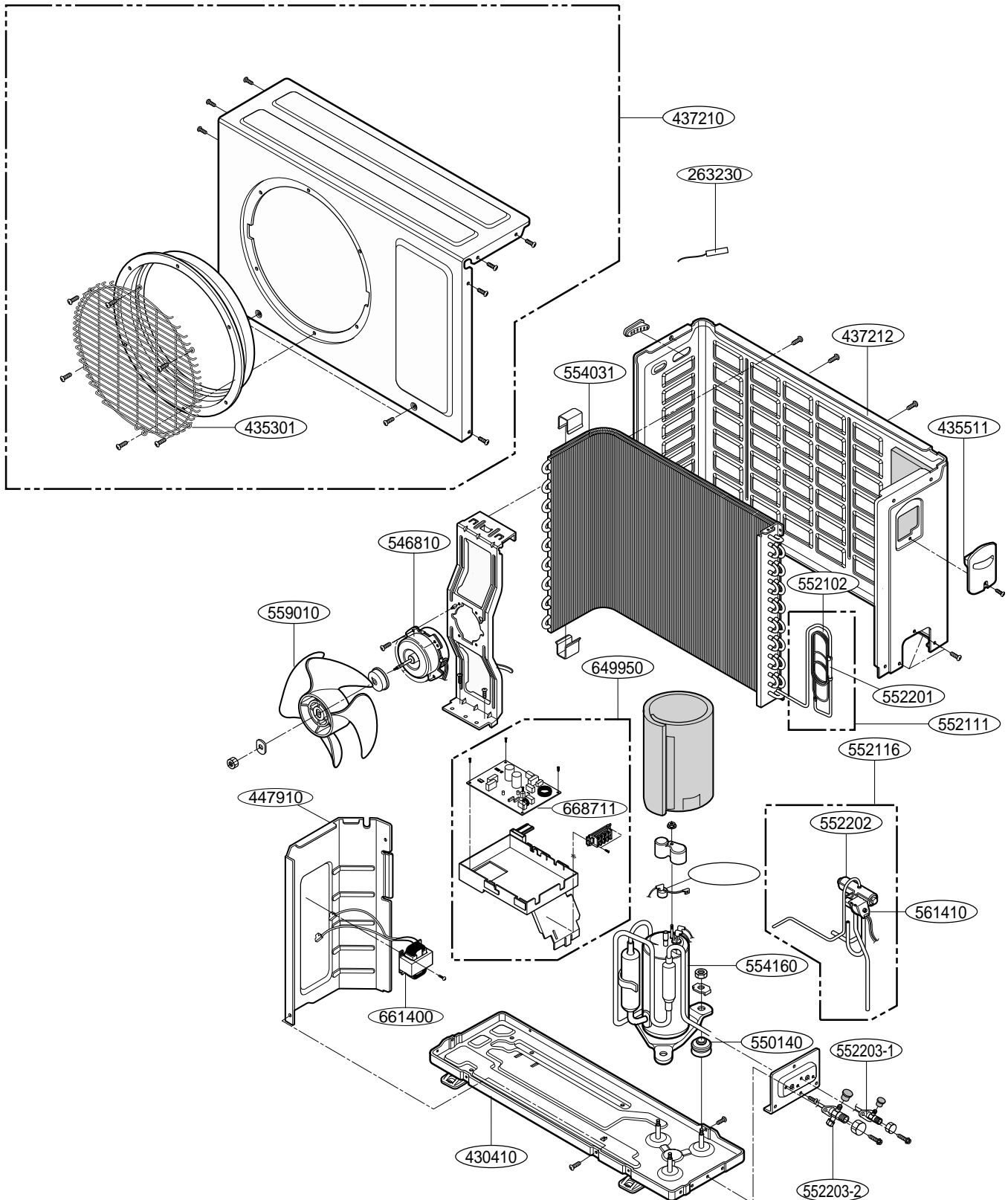
Connectors	Condition	Problem (error mode)
CN-4 WAY	OPEN	<ul style="list-style-type: none"> <li>Malfunctions 4-WAY valve.</li> </ul>
CN-FAN	OPEN	<ul style="list-style-type: none"> <li>Malfunctions fan</li> </ul>
CN-TH	OPEN/SHORT	<ul style="list-style-type: none"> <li>The operation LED blinks twice.</li> <li>The LED01M blinks twice.</li> </ul>
CN-D-PIPE	OPEN/SHORT	<ul style="list-style-type: none"> <li>The LED01M blinks 10 times.</li> <li>Continue Comp. operation. (when the discharge pipe TH opens)</li> <li>Stop Comp. operation (when the discharge pipe TH shorts)</li> </ul>
CN-UVW	OPEN	<ul style="list-style-type: none"> <li>Stop compressor.</li> </ul>

# Exploded View

## Indoor Unit



# Outdoor Unit



# Replacement Parts List

## Indoor Unit

LOCATION No.	DESCRIPTION	PART No.				REMARKS
		AS-W096U*H0	AS-W126U*H0	AS-W096U*H1	AS-W126U*H1	
131410	CHASSIS ASSEMBLY	3141A20007B	3141A20007B	3141A20007B	3141A20007B	R
135080	DECORATION(TOP)	3508A20034E	3508A20034E	3508A20034E	3508A20034E	R
135080	DECORATION(BOTTOM)	3508A20034F	3508A20034F	3508A20034F	3508A20034F	R
135311	GRILLE ASSEMBLY,DISCHARGE	3531A10137B	3531A10137B	3531A10137B	3531A10137B	R
135312	GRILLE ASSEMBLY,FRONT	MIRROR	3531A21004W	3531A21004W	3531A21004W	R
		BLUE	3531A21004Z	3531A21004Z	3531A21004Z	R
		WHITE	3531A21024B	3531A21024B	3531A21024B	R
		METAL	3531A21024A	3531A21024A	3531A21024A	R
135314	GRILLE ASSEMBLY,INLET	MIRROR	3531A21010E	3531A21010E	3531A21010E	R
		BLUE	3531A21010B	3531A21010B	3531A21010B	R
		WHITE	3531A21010C	3531A21010C	3531A21010C	R
		METAL	3531A21010A	3531A21010A	3531A21010A	R
135516	COVER ASSEMBLY,MOTOR	3551A20050C	3551A20050C	3551A20050C	3551A20050C	R
145200	LINK	4520A20008A	4520A20008A	4520A20008A	4520A20008A	R
146811	MOTOR ASSEMBLY,STEP	4681A20055A	4681A20055A	4681A20055A	4681A20055A	R
152302	FILTER(MECH),A/C	5230A20022A	5230A20022A	5230A20022A	5230A20022A	R
159830	AIR CLEANER ASSEMBLY	5983A10006T	5983A10006T	5983A25003H	5983A10006T	R
159901	VANE,HORIZONTAL	5990A20015B	5990A20015B	5990A20015B	5990A20015B	R
237900	WINDOW,DISPLAY	3790A20046E	3790A20046E	3790A20083A	3790A20083A	R
249951	CONTROL BOX ASSEMBLY,INDOOR	4995A20287N	4995A20287S	4995A20486X	4995A20486Y	R
263230	THERMISTOR ASSEMBLY	6323A20004H	6323A20004H	6323A20004H	6323A20004H	R
264110	POWER CORD ASSEMBLY	6411A20014V	6411A20026T	6411A20014U	6411A20014U	R
266090	H.V ASSEMBLY	6609A10005A	6609A10005A	6609A10005D	6609A10005D	R
267110	REMOTE CONTROLLER ASSEMBLY	6711A20077Y	6711A20077Y	6711A20077Y	6711A20077Y	R
268712	PWB(PCB) ASSEMBLY,DISPLAY	6871A20463C	6871A20463C	6871A20463C	6871A20463C	R
268714	PWB(PCB) ASSEMBLY,MAIN	6871A10104B	6871A10104B	6871A10104D	6871A10104E	R
342800	BEARING	4280A20004B	4280A20004B	4280A20004B	4280A20004B	R
346810	MOTOR ASSEMBLY,INDOOR	4681A20048R	4681A20048R	4681A20048R	4681A20048R	R
35211B	TUBE ASSEMBLY,TUBING	5211AR7066P	5211AR7066N	5211AR7066P	5211AR7066N	R
352150	HOSE ASSEMBLY,DRAIN	5251AR1222R	5251AR1222R	5251AR1222R	5251AR1222R	R
354210	EVAPORATOR ASSEMBLY,FIRST	5421A20105C	5421A20105A	5421A20086D	5421A20086D	R
359011	FAN ASSEMBLY,CROSS FLOW	5901A20016A	5901A20016A	5901A20016J	5901A20016J	R
668713	PWB(PCB) ASSEMBLY,SUB	6871A20258B	6871A20258B	6871A20258B	6871A20258B	R
668713	PWB(PCB) ASSEMBLY,SUB	6871A20259A	6871A20259A	6871A20259A	6871A20259A	R
733010	PLATE	1H00843A	1H00843A	1H00843A	1H00843A	R
W0CZZ	CAPACITOR,DRAWING	3H01487A	3H01487A	3H01487A	3H01487A	R

NOTE) \*Please ensure GCSC since these parts may be changed depending upon the buyer's request.

(GCSC WEBSITE <http://biz@LGservice.com>)

## Outdoor Unit

LOCATION No.	DESCRIPTION	PART No.				REMARKS
		AS-W096U*H0	AS-W126U*H0	AS-W096U*H1	AS-W126U*H1	
263230	THERMISTOR ASSEMBLY	6323A20003G	6323A20003G	6323A20003G	6323A20003G	R
430411	BASE ASSEMBLY,OUTDOOR	3041A20008M	3041A20008Z	3041A20066A	3041A20066C	R
435511	COVER ASSY, CONTROL(OUTDOOR)	3551A30058Z	3551A30066A	3551A30115G	3551A30115G	R
437210	PANEL ASSY, FRONT SUB	3721A20027H	3721A20027H	3721A20027Q	3721A20027Q	R
437212	PANEL ASSY, REAR	3721A20026B	3721A20026F	3721A20026M	3721A20026M	R
447910	BARRIER ASSY, OUTDOOR	4791A30002G	4791A30002K	4791A30002G	4791A30002G	R
546810	MOTOR ASSEMBLY, OUTDOOR	4681A20068G	4681A20122A	4681A20122A	4681A20122A	R
550140	ISOLATOR,COMP	4H00982E	4H00982E	4H00982E	4H00982E	R
552111	TUBE ASSEMBLY, CAPILLARY	5211A30331X	5211A30331U	5211A33058A	5211A33058A	R
552116	TUBE ASSEMBLY, REVERSING	5211A10260F	5211A30698A	5211A21491B	5211A21491D	R
552202	VALVE,REVERSING	5220AR3228F	5220AR3228F	5220AR3228D	5220AR3228D	R
552203-1	VALVE,SERVICE	5220A20001Q	5220A20006F	5220A20001Q	5220A20006F	R
552203-2	VALVE,SERVICE	2H02479P	2H02479P	5220A20005B	5220A20005B	R
554031	CONDENSER ASSY, BENT	5403A20019V	5403A20028T	5403A20019V	5403A20019V	R
554160	COMPRESSOR	5416A90008B	5416A90008A	5416A90028A	5416A90029A	R
559010	FAN ASSEMBLY, PROPELLER	5901A10033A	5901A10033A	5901A10033A	5901A10033A	R
561410	COIL ASSY, REVERSING VALVE	6141AR3509J	6141AR3509J	6141A20010S	6141A20010S	R
649950	CONTROL BOX ASSY	4995A20203U	4995A20203Z	4995A20520F	4995A20520G	R
661400	REACTOR	5874A90003A	5874A90003A	5874A90003A	5874A90003A	R
668711	PCB ASSY	6871A10098F	6871A10098J	6871A10135F	6871A10135D	R

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(GCSC WEBSITE <http://biz.LGservice.com>)

